THE PHILIPPINE
JOURNAL OF SCIENCE
D. GENERAL BIOLOGY, ETHNOLOGY, AND ANTHROPOLOGY

VOL. IX NOVEMBER, 1914 No. 6

THE IGOROTS OF LEPANTO

Compiled and edited by JAMES A. ROBERTSON
(Librarian, Philippine Library, Manila, P. I.)

Nine plates and 1 text figure

INTRODUCTION

In order that local historical data regarding the Philippine Islands, which exist only in scattered manuscripts or in oral tradition, might be preserved, the Governor-General of the Philippines, under date of January 26, 1911, directed each provincial governor to "issue instructions to each *municipal presidente* to call together the old men in each and every barrio, *sitio*, or *arrabal* in his municipality [1] and obtain from them and from any documents in their possession the entire history of such community, in so far as may be possible." Each report was to embody, among other things, the present official name of the

[1] In Spanish times, each province was divided into units termed pueblos. The present units of the provinces are called municipalities or townships—the latter name being used in Mountain Province. Each of these divisions is presided over by an official known as the president or presidente. He is assisted by a vice-president or vice-presidente, by a secretary and treasurer or secretary-treasurer, and by a body of councilors or *concejales*. Each municipality or township consists of a number of small communities, known as barrios. The barrio may be likened somewhat to the ward of a city, except that many barrios are compact communities distantly separated from the rest of the larger unit. The chief official of the barrio is termed lieutenant or *teniente*. Many barrios are in turn divided into small districts called sitios, although this term has no legal significance. Arrabal is a term used to designate the suburbs of a large town. It is used at times in the Philippines to denote a section of the municipality, and is itself divided into barrios. The terms *comandancia* and *distrito* relate to military not civil government. See Census of the Philippine Islands. Washington (1905), 1, 57–59.

barrio or other division, its native name and meaning, date of its establishment, the original families, lists of officials, old stories or legends, and the history of any old abandoned barrios or other divisions. The material was to be forwarded to the Executive Secretary of the Philippine Government and by him to be deposited in the Philippine Library—a Government institution which bears the same relation to the Philippine Islands as the Library of Congress does to the United States.

Of course, it is recognized that some of the material gathered in this way is apt to be wrong, misleading, or fragmentary. Much of it can, however, be checked by known written history, while often one manuscript will check or correct another, and frequently common sense will act as the best guide as to what is to be received and what rejected. On the other hand, many little points that have entirely escaped writers may be preserved. The generation from which this material was obtained is rapidly passing away, and the new generation that is taking its place is losing, almost insensibly, a part of the storied traditions.

A considerable number of the 38 provinces have already complied fully with the order, and about 600 manuscripts of varying degrees of excellence have been added to the library. Some are written in the native languages, some in Spanish, and some in English. Many of those written in languages other than English are accompanied by English translations. Among the manuscripts are those for Lepanto subprovince, a part of Mountain Province of northern Luzon.[2] These were gathered under the

[2] The evolution of the present Mountain Province is interesting, and may be followed in various Acts of the Philippine Commission. During the latter part of the Spanish régime, the 7 subprovinces now composing Mountain Province were known as distritos or comandancias, or formed part of another province. Act No. 410, enacted May 28, 1902, provided for the organization of a provincial government in the territory comprised in the comandancias of Lepanto, Bontoc, and Amburayan, and the territory lying between Abra, Cagayan, and Bontoc not included within the limits of any province, and providing for justices of the peace in this territory and in Nueva Vizcaya Province [Public Laws. Manila (1903), 1, 970–972]. The new province was called Lepanto-Bontoc. Bontoc subprovince contained certain lands not before assigned. The other two subprovinces followed closely the limits of the former comandancias. Act No. 411, enacted on the same date as the above [Public Laws (1903), 1, 972], provided for the establishment of civil governments in the townships and settlements of the province. Act No. 768, Manila, 1904, enacted May 26, 1903 [Public Laws (1904), 2, 422, 423], fixed the boundary lines between Amburayan and Lepanto subprovinces and Benguet Province. Act No. 867, enacted September 5, 1903 [Public Laws. Manila (1905), 3], declared the Mountain Judicial District to consist of the Provinces of

supervision of Mr. W. A. Miller, formerly lieutenant-governor of Lepanto. The various manuscripts were all written in the Ilocano language, with the exception of that for Mancayan, generally by the presidente or secretary of the township, at the dictation of the old men, and all were translated into English, evidently by a Filipino in the office of the subprovince in Cervantes. There are reports for all the 12 townships of the subprovince; namely, Ampusungan, Angaki, Bagnen, Banaao, Bauco, Besao, Cayan, Cervantes, Concepcion, Mancayan, Sabangan, and San Emilio. "The material for Bauco," says Beyer, "is quite accurately written, and is more valuable than all that precedes it." The people of Lepanto belong in general to the wild Malayan tribe called Igorots, who are of the same stock as those of the adjoining Benguet subprovince.[3] In as much as the

Lepanto-Bontoc, Benguet, and Nueva Vizcaya. Act No. 926, enacted October 7, 1903 [Public Laws (1905), 3, 62–77], extended land laws already enacted for other provinces to Lepanto-Bontoc. Act No. 955, enacted October 23, 1903 [Public Laws (1905), 3, 110–111], provided a method of taxation, in accordance with Act No. 387 [Public Laws (1903), 1, 914–915]. Act No. 1396, enacted September 14, 1905 [Public Laws (1907), 5], provided for the organization of provincial governments in all the provinces of the Islands, other than Moro Province. All parts of Acts Nos. 387, 410, and 566, at variance with this Act, were repealed. The capital of Lepanto-Bontoc was declared to be at Cervantes. Act No. 1397, enacted September 14, 1905 [Public Laws (1907), 5], provided for the establishment of local civil government among non-Christians. The subject of taxation received considerable attention in the above Act. By Act No. 1642 [Public Laws (1908), 6] the subprovinces of Kalinga and Apayao were established and boundaries fixed. Act No. 1876, enacted August 18, 1908 [Public Laws (1910), 7, 131–134], created Mountain Province, with the 7 subprovinces of Benguet, Amburayan, Lepanto, Bontoc, Ifugao (formerly comandancia of Quiangan) Kalinga, and Apayao. The boundaries of Lepanto are still somewhat vague. The Spaniards located it between 16° 45′ and 17° 15′ north latitude, and between 124° 10′ and 124° 45′ of longitude east of Madrid. Each of the 7 subprovinces is governed by a lieutenant-governor. Legislation for the province pertains to the Philippine Commission alone.

[3] Since early Spanish days, much confusion has existed regarding the Igorots, and the term Igorot, which simply means hillmen, has been used to designate several distinct peoples. The confusion has been marked with regard to the inhabitants of the districts (now subprovinces) of Benguet and Lepanto who are apparently of one stock, and those of Bontoc who differ from the former. Beyer [*This Journal, Sec. D* (1913), 8, 95] says definitely: "The Bontoks are sometimes wrongly called Igorots, but have no more right to that name than have the Ifugaos. They are a distinct people, occupying a part of the subprovince of Bontok." No adequate classification of the tribes of northern Luzon has yet been adopted, although Worcester has done considerable in clearing up old confusions. A classification based on dialect might perhaps answer all requirements. Worcester [*This Journal* (1906), 1, 834] says: "The line between the territory of the Bontoc *Igorots* and

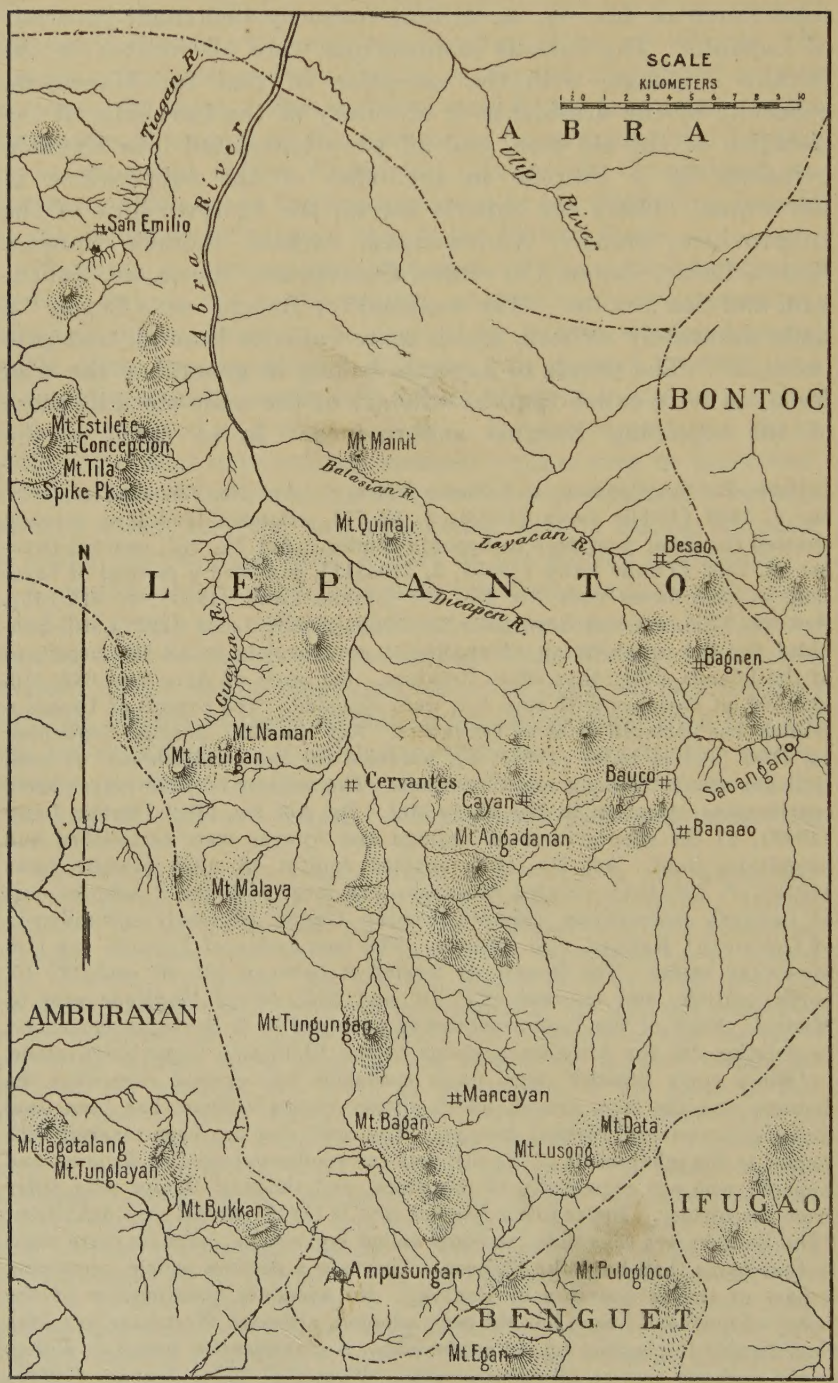


FIG. 1. A part of Mountain Province, Luzon.

information contained in the documents for Lepanto was obtained mainly from people who, although in the lower grades of civilization, are called "wild," in order to distinguish them as non-Christians from the civilized Christian Malayan races properly called Filipinos,[4] the essential parts relating to their customs and beliefs are here reproduced. The few stories recounted, fragmentary as they are, have come down by oral tradition through many generations; most of the practices described are still in force, although they are bound to disappear through contact with higher civilization. As will be seen by citations in footnotes, the present culture of the Igorots is not very different from that of some of the Filipinos at the time of the Spanish conquest.

It is hoped that these documents will prove an addition to what has already been published about the northern peoples of Luzon by well-known writers, such as Worcester, Jenks, and Beyer, if in no other way than as a basis for comparison. Very little has been written about the Igorots of Lepanto, and little real ethnological work has been done among them. This paper is in no sense the result of personal investigation among the Igorots, and the only claim that I make for it is as editor and compiler. In editing these accounts I have considered of minor importance the orthographic peculiarities of the partially English-educated Filipino translator, interesting as these might be in a paper devoted exclusively to the study of English as learned in the Philippines, for I fear lest the phonetic spelling detract from the subject of prime importance. Most of the errors in spelling have, therefore, been silently corrected, a very few punctuation marks and capitals altered, and a few glaring grammatical errors corrected. Otherwise, the translator, when citations are made direct, is followed strictly. The material taken from the Mancayan manuscript, however, I translated

that of the Benguet-Lepanto *Igorots* is well defined, the first *rancherias* of the latter tribe on the north and west being Quinali, Besao, Payeo, Bagnen, Bangnitan, Data, Sabangan, Bonayan, Pingad, Gayan and Namatec." He notes also (p. 851) that many Tinguians live among the Lepanto Igorots of Tiagan, Concepcion, and Angaki. The dialects spoken by the Igorots of Lepanto (p. 862) are known as Kankanai, in the southern part, and Katangnan, in the central and northern parts. Regarding their state of culture, Worcester (p. 850) says: "All in all, the Benguet-Lepanto *Igorots* must be considered far more highly civilized than any other non-Christian northern Luzon tribe except the *Tingians*." Beyer (ut supra, p. 97) implies that the Ifugaos are the most highly developed of the mountain peoples, or at least the most capable of development.

[4] Census of the Philippine Islands. Washington (1905), 1, 22.

directly from the Spanish, as the translation furnished was very poor and inadequate. All editorial interpolations are inclosed in square brackets. Some at least of the numerous inclosures in parentheses appear to be explanations made by the translator from Ilocano to English. These are reproduced without comment. Excerpts from the manuscripts from the several townships are reproduced in alphabetical order, according to the name of the township, and in small type. Each document, or each part of each document, is signed with the marks and names of the old men consulted and by various officials. These are reproduced in no case. Considerable aid in annotation has been given by Mr. H. Otley Beyer of the Bureau of Science. All notes by him are marked with his name. Other aid has been given by Mr. Otto Scheerer of the University of the Philippines, by Mr. Luther Parker and others of the Bureau of Education, by Dr. Merton L. Miller of the Bureau of Science, and by Mr. Otis W. Barrett of the Bureau of Agriculture.

Lepanto subprovince (see map), obviously named from the celebrated battle, is bounded on the north by Abra subprovince (which belongs to Ilocos Sur), on the east by Bontoc and Ifugao subprovinces, on the south by Benguet subprovince, and on the west by Amburayan subprovince and Ilocos Sur Province. Perez (13) says that all the territories of Lepanto and Bontoc, and a great part of Abra, were formerly called Valle de Cayán, until Lepanto was declared an independent comandancia [5] in 1852. Various expeditions were made into the district. Luis Perez Dasmariñas and other officials, in their expeditions to Tuy, in the sixteenth century, and Quirante, in his gold-hunting semi-scientific expedition in 1624, probably entered the boundaries of the present subprovince. Governor Diego de Salcedo dispatched an expedition to the mountains in 1665. But the early expeditions effected little. The expedition of 1836, dispatched by Governor Pedro Salazar, that of 1877, the earlier work in the Mission of Cayan, the mission work for some years after 1881, and the military occupation beginning with 1852 accomplished more. The term Mission of Cayan comprehended the missionary labors for much of Lepanto. However, Christianity never gained more than a slight foothold among the Lepanto Igorots.

[5] See the early official guides published during the Spanish régime; also, Perez, Igorrotes. Manila (1902). The chief official of the comandancia was the *comandante politico militar*, who combined in himself all three functions of government.

For the years 1881 to 1886, the reports show 58 marriages, 253 baptized children, 83 baptized adults, and 85 deaths of converts. For the years 1886 to 1891, the numbers are, respectively, 179, 524, 597, and 364. As a result of the mission work, various schools were opened both for boys and for girls, while 7 private schools were maintained at one time by the Igorots. None of the schools, as was natural, came to any prominence. The Spaniards desired to exploit the mineral resources of the district, and although the operations of the Cantabro-Filipino company were rather extensive for some years the exploitation was not thorough. The capital of the district was shifted from Cayan to Cervantes by the Spaniards, and the latter pueblo (now township) was retained by the Americans as the capital on the change of Government. With the creation of Lepanto-Bontoc Province, and later of Mountain Province (see footnote 2), the district of Lepanto was made a subprovince.

No real systematic study has yet been made of Lepanto and its inhabitants, despite the early missions and the fact that Spanish contact was rather close after 1856 because of the mines, while during the American régime Cervantes has gained a new importance because of its location. This is the time for a thorough ethnographical survey of the subprovince to be made, for customs are insensibly changing, and if ethnological study be delayed too long much will be lost. According to Worcester, the number of Lepanto Igorots probably does not exceed 31,000. With them are found some Tinguians and Bontocs, while the enterprising Ilocanos are pushing steadily into the Igorot territory. Already the pure culture is passing away, and the study of the real Igorot of the subprovince is becoming more difficult. The people are being raised to a higher level, and new standards are being created, for the march of progress cannot be obstructed. Within a few years, the study now possible cannot be made (Plate I).

AMPUSUNGAN [6]

According to the manuscript, the township of Ampusungan belonged to the district of Benguet until 1902. It was known originally as Alacan. The Spaniards, on account of its sparse population, did not organize it as a town (pueblo) until 1878.

[6] Local civil government was provided for all the townships of Benguet Province, to which Ampusungan formerly belonged, by Act No. 48, enacted November 22, 1900. Act No. 768, enacted May 26, 1903, fixed the boundaries of Benguet.

For many years the Spaniards were a source of terror to the people, who promptly deserted their homes whenever any of the *guardia civil*[7] appeared. The account of the customs of the inhabitants of Ampusungan is meager. It is as follows:

In the olden time our parents never used to make *cañaos*[8] and during their whole lives never knew of any remedies for their sickness and a great number of them died because they knew of no remedy for their sickness; but one of the old men thought that cañaos were good for anybody that was sick, so, therefore they used to have cañaos if there was anybody among them that had any kind of sickness in order that their sick might become well. And when they had their cañaos they used to take and kill any kind of animals and one of the old men would pray to the sun, moon, and stars and to his dead relatives, also to the anitos[9] in

[7] The guardia civil (civil guard) of the Spanish régime was similar to the Philippine Constabulary of to-day. It was, however, a part of the regular army. It was named after a similar body in Spain. One regiment was stationed in northern Luzon. See also Worcester, Philippines, Past and Present. New York (1913), 1, 378–380.

[8] Cañao, a feast. Worcester [*This Journal* (1906), 1, 850] says: "Sickness is attributed to *anitos*. Very few native medicines are employed in treating the sick and great reliance is placed in *cañaos*, at which carabaos, cattle, pigs, or chickens, according to the wealth of the sick person, are killed." The cañao is common throughout Mountain Province.

[9] Worcester [*This Journal* (1906), 1, 817] notes that the rather vague belief in the anito is widespread among the peoples of Mountain Province. The word, he points out, is used to designate a spirit, often that of a dead person, while the anito is at times represented by an image made of wood or by tying grass or leaves together. Of the anito or its representation aid is asked, and propitiatory ceremonies are performed to it. Belief in the anito is not, however, confined alone to the mountain peoples of northern Luzon. There is probably not a single people in the Philippines that does not now cherish, or that has not at some time in its history cherished, a belief in the anito. Even the Negritos near Floridablanca, Pampanga, who are not Malayan, believe in the anito, but they probably acquired it from the Malayan people with whom they came in contact. Loarca in his Relación [republished in both Spanish and English in Blair and Robertson, The Philippine Islands. Cleveland (1903–1909), 5], written about 1580, says of the Tagalogs of Manila (pp. 173–175): "They said that this *Batala* (the Tagalog deity) had many agents under him, whom he sent to this world to produce, in behalf of men, what is yielded here. These beings were called *anitos*, and each *anito* had a special office * * *. When the natives were asked why the sacrifices were offered to the *anito*, and not to the *Batala*, they answered that the *Batala* was a great lord, and no one could speak to him. He lived in the sky; but the *anito*, who was of such a nature that he came down here to talk with men, was to the *Batala* as a minister, and interceded for them. In some places, and especially in the mountain districts, when the father, mother, or other relative dies, the people unite in making a small wooden idol, and preserve it. Accordingly there is a house which contains one hundred or two hundred

order that he might be safe from any disease: "Here is an animal that we sacrifice in order that all of you may unite in the same place and use it." That was the old man's prayer. As soon as this cañao was over the sick man would feel better, and they say that the cañao that they performed acted the same as medicine. This is our strong inheritance from our old men that serves as a reminder to us and that we cannot deny, and this will be handed down again to our children.

ANGAKI [10]

The township of Angaki comprehends the barrios of Angaki, Cayos, Malideg, Patiacang, Mabalili, and Suagayan. According to the manuscript, Angaki was first inhabited in 1836. The first inhabitants came from two small settlements on the mountain just west of Angaki, but their fathers and grandfathers had gone thither from other places—a fact that proves that there was considerable movement among the mountain peoples. The first Christians came in 1884. The first *gobernadorcillo* [11] was appointed by Ramon Tajonera, governor of Abra Province,

of these idols. These images also are called *anitos;* for they say that when people die, they go to serve the *Batala.* Therefore they make sacrifices to these *anitos,* offering them food, wine, and gold ornaments; and request them to be intercessors for them before the *Batala,* whom they regard as God." For other old citations regarding the anito, see Blair and Robertson, ut supra: 6, 146; 12, 181 (Chirino, Relacion, 1604); 40, 71–73 (Colin, Labor evangelica, 1663); 40, 222, 223 (San Agustin's celebrated letter, 1720); 40, 333–336 (San Antonio Chronicas, 1738–44). By the early Visayans the anito was known as *diwata.* Cf. Jenks, *Pub. P. I. Ethnol. Surv.* (1905), 1, 196–200.

[10] Angaki is described by Perez, Igorrotes, 93–107. It is 22 kilometers northwest from Cervantes and has a picturesque location amid small streams and cascades. The township has an abundance of good mineral waters. Considerable weaving was formerly carried on there. The mission established in Angaki was organized by Fray Antonio Blanco, O. S. A. During the Spanish régime a boys' school had a more or less precarious existence.

[11] Montero y Vidal, Archipiélago Filipino. Madrid (1886), says of the gobernadorcillo: "Certain native functionaries, improperly called gobernadorcillos, exercise command in the towns; they correspond to the alcaldes and municipal judges of the Peninsula, and perform at once functions of judges and even of notaries, with definite powers. As assistants they elect several lieutenants and alguacils, proportionate in number to the inhabitants. Those assistants together with three ex-gobernadorcillos, to whom are referred the duties of judges of cattle, fields, and police, constitute a sort of town council." The recompense was so small that the office was almost honorary, the duties were onerous, and the incumbent of the office ran the risk of annoyances, fines, and imprisonment. Notwithstanding these disadvantages the office was much sought after. The above is taken from Blair and Robertson, ut supra, 17, 329, 330.

as a reward for guiding the Spanish soldiers into the mountains.[12] Tajonera encouraged the people to plant rice, tobacco, and other products. The first taxes were paid in wax and baskets, but "when Angaki began to grow rich, the people began to pay taxes at the rate of 12 centavos each, and in 1887 when Mr. Ramon Francia [13] was the governor in Cervantes, we paid 50 centavos taxes each, until the revolt between the Spaniards and the Filipinos occurred, and later we paid a contribution of 40 centavos each." The customs as related by the old men of the barrio of Angaki are as follows:

These were the customs of our forefathers when one of them wanted to get married.[14]

When a young man sees a young woman to whom he wants to get married, he tells it to a married man whom he asks to go and speak to the parents of the woman. And if he goes and finds out that they both have the same affection, the woman's parents tell him the day on which the young man must bring a load of fuel to the house of his father-in-law; and then each of them must begin to help the other to do some kind of work. And if it takes them a year to do this, the parents of the man and woman make an agreement as to which one of them shall build a house for the married couple. And when they have straightened out their agreement they tell it to some old man [15] who must then make an offering of the cañao that will unite them.

[12] For a description of Abra, now a part of Ilocos Sur Province, see Memoria descriptiva de la provincia de Abra, n. p., n. d.; Perez, Igorrotes, 271–285; and Buzeta y Bravo, Diccionario geográfico estadístico, histórico de las Islas Filipinas. José C. de la Peña, Madrid (1850–51), 1. The official government guides for 1848–50 show Ramon Tajonera as comandante político militar.

[13] Ramon Francia y Parajua, according to the Guia Oficial de Filipinas for 1897, was comandante político militar at Cervantes in 1897. No earlier mention of him is found. One peso (100 centavos) Philippine currency equals 50 cents United States currency. The peso of Spanish times was worth considerably less.

[14] See also, post, other descriptions of marriage customs. Cf. with the accounts of these documents the old customs of Philippine peoples in Blair and Robertson, ut supra: 3, 61 (Relation by Legazpi, Cebu, July 7, 1569); 3, 166 (Conquest of Luzon, 1572); 5, 119, 153–161 (Loarca, Relation, ca. 1580); 7, 181–184 (Plasencia, Customs of the Tagalogs, 1589); 16, 124–126 (Morga, Sucesos, 1609); 34, 320 (1580); 40, 88–91 (Colin, Labor evangelica, 1663); 40, 167–171 (Combés, Historia, 1667); 43, 123, 124 (Martinez de Zuñiga, Historia, 1803). See also Jenks, *Pub. P. I. Ethnol. Surv.* (1905), 1, 202, 203.

[15] Alonso Martin Quirante in Expeditions to the mines of the Igorotes, written in 1624 (Blair and Robertson, ut supra, 20, 274) says: "Their sages or philosophers are the oldest men or women, whom they respect and obey in an extraordinary manner, and most when they are occupied in the said feasts; for they say that then and even ordinarily those persons are wont to talk with the devil, who keeps them blinded."

Thus, when they are going to celebrate the wedding, the parties on both sides are first gathered together to see if the subsistence for the cañao is sufficient; they then tell the old men to give a cañao called *begnas*[16] in the old men's tribunal,[17] and after that they go from house to house to sing a cañao song, and after this, the wedding of the couple to be married is performed and then they will again have nine days of wedding prayer until it is finished; they should not work for three years [sic] and are not allowed to go to Candon[18] or any place until the three years are completed.

In general the townsmen must celebrate a feast called begnas[19] thrice a year and after each they are not allowed to work for a week if it is well done; if an earthquake or some other bad thing is predicted by the old men, they cannot work for a long time.

The immediate ancestors of the people of the barrio of Malideg migrated into the mountains from the Ilocano town of Santa Maria, in order to escape the baptism which the Spaniards were forcing on them and in order to live in accordance with Igorot customs. Until American rule, this barrio was a part of the town of Tubo;[20] subsequently, it was separated from that town and placed within the jurisdiction of Lepanto. During Spanish times, the tax amounted to 12 centavos per person, and until the rule by the Katipunan[21] the same moderate sum was required for the registration of a license for a carabao or horse. The Americans increased the taxes to 1 peso for a personal cedula and a license of 1 peso for carabaos, horses, and cows.[22] The customs as related by the old men are as follows:

The custom we inherited from our fathers and grandfathers is that when a young man and woman want to get married there must be one

[16] The religious ceremony called begnas corresponds to the Ifugao *hóñga*, which is a ceremony for the general welfare of a group of people. The group may be of any size, from a single family, or a party of travelers, to a village or a whole clan. Freedom from sickness and crop failure, health, happiness, and increase of rice, chickens, pigs, and children are the chief things prayed for at a hóñga.—BEYER.

[17] The building here referred to as a tribunal is the Lepanto structure corresponding to the Bontoc *pabafúnan* or *fawi*. See Jenks, *Pub. P. I. Ethnol. Surv.* (1905), 1, 50–52.—BEYER.

[18] A town of Ilocos Sur, with which the Igorots carried on considerable trade. Many other instances of taboo will be noticed in the following pages.

[19] See footnote 16. The ceremony here referred to is evidently for a large group of people. Small begnas are held frequently.—BEYER.

[20] By Act No. 293, this *rancheria* was placed in Abra Province.

[21] Meaning the short period of control exercised over the mountain districts of Luzon by the Filipino insurgents. The expression is in general use in Mountain Province.

[22] In addition to the taxes named, there was also for the earlier years of American occupancy a slaughterhouse tax of from 25 to 50 centavos for each animal killed. The taxes are higher than the legitimate taxes during the Spanish régime.

or two men to stand as witnesses to arrange the matter. Whenever one of the married couple repents and makes a complaint to the old men or *principales* of the town, they are punished with a fine of 1 carabao, 30 bundles of palay,[23] 6 pesos, 1 jar of *basi* or *tapuy*,[24] and this fine of the one who repents will be eaten by the people and not given to one person only. But if the married couple are quiet and live in harmony, the parents of the woman or wife must kill a hog; they will also take some basi or tapuy accompanying the hog's meat which they give to the parents of the husband; the relatives of the husband's party gather together and come to eat and drink; and from the time when the wife's party gives these eatables to the husband's party during a day and a night, and the time is rather good and [there is] no earthquake no rainbow nor shower or even [though] it rains heavily if [the weather be] not stormy and no chicken is caught by a hawk in the town, and no person dies, and both parents of the married couple always keep their fire alive, the married couple will then have rather long lives and many children. They then perform the marriage and the four parties of the wife and husband are gathered together and the number of animals that are killed are 14 hogs and 18 chickens or hens. These must not be less then the number needed; and these hogs and chickens should be eaten at once in one day.[25] There is another and last *pamegyasan* (feast for wedding), such as *baquid*, *lapsag*, *sungeb*, and *quinaoang*, and the ceremonies for these feasts are the killing of 10 hogs and 15 chickens; this is performed for the same wedding.

When anyone dies, the clothing we use must be arranged in the following order: When an old man dies, his clothing will be a blanket, a coarse G string and *abongos*, and if an old woman, the clothing will be *lamma*, *bayaong*, *bacguet*, and a coarse blanket; but if a boy dies, his clothing might be a coarse blanket; if a boy dies, his clothing must be a coarse G string

[23] Palay is unhusked rice; the same as paddy.

[24] A manuscript conserved in the Philippine Library, and entitled "Memoria aprocsimada del pais Ygorrote dependiente de la 1ª. Division Militar, escrita por los oficiales Dn. D. S. y D. C. G. en el mes de Febrero de 1843, describes the drink basi as follows: "They (the Igorots) cook a quantity of rice, pound up another like quantity, then mix the two thoroughly with well-pressed ginger and with a quantity of hay that they call *anuad*. After the abovesaid is thoroughly mixed, they place it in a jar, the mouth of which they stop with leaves from some tree. Then they leave it under the house for about three days in order that it may ferment. At the end of that time they use it after putting water in it." Cf. Jenks [*Pub. P. I. Ethnol. Surv.* (1905), 1, 144], who describes the making of basi quite differently. According to Jenks's account, basi is a "fermented beverage prepared from sugar cane," and no rice is used in its manufacture. The authors of the manuscript seem to have confused basi with tapuy. For the method used by the Bontocs in the manufacture of tapuy, see Jenks, ut supra, 144. Tapuy appears to be much like the *bubud* of the Ifugaos. [For a full account of the methods of manufacture and difference between basi, tapuy, and búbûd, see *This Journal, Sec. A* (1912), 7, 97–119.—BEYER.]

[25] Compare with the eat-all feasts of the North American Indians described so often by the Jesuit missionaries in their famous relations. The two seem to have but one point in common; namely, the religious necessity and significance of disposing of all of the food and drink.

and *bay-an;* and if it is a girl her clothing must be lamma, bacguet, and *lanlan;* the ceremony to be made for the dead is the killing of 10 hogs and 15 chickens; we inherited these customs from our grandfathers and fathers.[26] (Plate III.)

The second custom that we inherited is that we must perform a general cañao called begnas in the abong[27] (tribunal) just after planting and harvesting of the rice crop;[28] if there are some to be married, they celebrate the wedding just after this cañao; the ceremony observed for begnas is the killing of a dog, 2 hogs, and 3 chickens, and in the afternoon of the same day we string the meat not eaten on fine split bamboos, also the chicken and dog; there are as many of them as the number of houses in our settlement; on the third day we again take a hog to be killed to the same abong, and all the people in that settlement must be gathered together, and the meat must be divided among them to be distributed to our houses for the performance of a cañao for the hog or chicken; not one of us is allowed to go to the country to work during seven days, and no one can come into our town not even anyone who has some letters to bring us unless we let him come in; we inherited this custom from our fathers and they

[26] The abongos is a headband or turban. The bayaong is a woman's striped skirt, ornamented with conventional designs, and made only in Lepanto.—Beyer.

Jenks [*Pub. P. I. Ethnol. Surv.* (1905), 1, 79, 80] describes the clothing of the Bontocs as follows: "The burial clothes of a married man are the los-ádan, or blue anito-figured burial robe, and a breechcloth of beaten bark, called 'chi-nang-tá.' In the coffin are placed a fá-a, or blue cotton breechcloth made in Titipan, the fan-chá-la, a striped blue-and-white cotton blanket, and the to-chong, a foot-square piece of beaten bark or white cloth which is laid on the head. A married woman is buried in a kay-ĭn, a particular skirt made for burial in Titipan, and a blue-bordered waist or la-ma. In the coffin are placed a burial girdle, wâ-kĭs, also made in Titipan, a blue-and-white-striped blanket called bay-a-ong, and the to-chong, the small cloth or bark over the hair. * * * With the men are buried, besides the things interred with the married men, the basket-work hat, the basket-work sleeping hat, the spear, the battle-ax, and the earrings if any are possessed. * * * In addition to the various things buried with the married woman, the unmarried has a sleeping hat. Babes and children up to 6 or 7 years of age are buried in the sementera [that is, field] wrapped in a crude beaten-bark mantle. This garment is folded and wrapped about the body, and for babes, at least, is bound and tied close about them." See also Jenks, *A. Anthrop.* (1904), n. s., 6, No. 5; Perez, *Pub. P. I. Ethnol. Surv.* (1904), 3, 237; and Lillo de Gracia, Distrito de Lepanto, 30.

[27] Abong̃, or abûng̃, is the universal name throughout northern Luzon for a long, low dwelling house, built either directly on the ground or at a slight elevation above it.—Beyer.

[28] See Barton, *This Journal, Sec. D* (1911), 6, 81–103; and Jenks, *Pub. P. I. Ethnol. Surv.* (1905), 1, 103–105. Superstitions in regard to planting and harvesting are very common in the Philippines. Miss Emma Yule, a teacher in the Manila High School, has gathered together from her students many of the common superstitions regarding the planting, care, and harvesting of rice. This is entitled, Some superstitions and customs of the Filipino farmer, and is soon to be published.

inherited it from the grandfathers of our grandfathers, and thus we signed it and put our cross at the end of the names of those who cannot read or write.

The ancestors of the inhabitants of the barrio of Patiacang are traced by the manuscript to 1793, when they "went to a place called Balaoa, west of Santa Lucia in Ilocos Sur." The infidel Igorots were compelled to pay a tax for the benefit of living in the town and to promise to aid the Christians should harm threaten from other Igorots. In 1840, when a census or tax list of the people of Patiacang was made, the Spaniards appointed several officials in the barrio. In 1908, the barrio was organized under the American Government. No customs or beliefs are recorded.

The story of the barrio of Mabalili is as follows:

We, the inhabitants of the barrio of Mabalili, in the limits of the township of Angaki, Mountain Province, have written out this history of the customs we used and how we lived in the ancient times. The first people who cleared and formed this place into a town were Guilalo, Ao-aoiden, and Balugong; they and their wives came from Sumade; they cleared these places and planted camotes, *aba*, maize, bananas, and squashes, which they used for their food, and when they had increased in number, Guilalo and Amasan moved to the other side, called Tubó, clearing the same, and when some other people from other towns came to join them, they thought of turning the land that would be watered from the brooks into good but small rice fields; the boundary of our town is close to the mountain called Tirad on the south and touches the foot of the mountain called Tubba. The custom of marrying a young man and a young woman is first that they make an agreement and they must tell their agreement to the old men or to the principales,[29] and they [that is, the old men or principales] go to the houses of the parents of the girl and boy to witness the agreement; the [acts of the] witnesses are [that] the principales or the old men eat *etag* (salted pork); but, if at the last moment there should be one of the marriage couple who wishes to change his mind or to dissolve their marriage, we punish her or him with 25 (anything counted to that number) as was our custom in ancient times until now. Thus after the marriage of the couple has been witnessed, first, the husband goes to find fuel and brings it with him to the house of his parents-in-law and after that the wife gets a jar of water and takes it with her to the house of her parents-in-law also; as to their building they kill a hen, and if the hen that they kill (by beating the body of the hen with a stick or anything else until the hen dies) has a good and satisfactory gall, we inform our town mates; and everyone who comes to help them, must bring with him some cogon or bamboo that will be added to the materials that they are preparing for the building;

[29] In the Filipino town, during the Spanish régime, the *principalia* was a class made up of those who had held the office of gobernadorcillo and *cabeza de barangay*. The members of the class were known as principales. Among the mountain peoples, the chiefs and often the old men form the principalia.

and after the house is built, we kill a hen and then cook it mixed with etag (salted pork); but when they are going to live in the house they *mang-mang*[30] (to kill a chicken with a stick) a chicken in the stove inside of the house, and if the liver is all right they then stay in the house doing nothing for three days and then again kill a chicken in a fireplace outside of the house; but when they want to go to the country to work and the liver is all right, they again kill one hog in the fireplace outside of the house, and the meat of that hog will be given to those who come as their guests; and at the third day they must perform a cañao called *saguepsep* in the house using one chicken; and after seven days of *oaned* (cañao) they again *baquidan* hogs (the hogs are put in a frame called baquidan as required in the cañao); 2 hogs and 2 chickens are needed in this cañao; the hogs must be 1 female and 1 male; and then the chickens are put between them, and no one is allowed to go as far as or to the places where the Ilocanos live for a month, during which they will not do any kind of work.

Our customary feast which we often used to offer to God so that He may let us live longer is a general cañao. The ceremony that we make in this cañao is the killing of a hog in the country, and when we return home we must take 1 hog to the abong in which we are gathered together, and after this we must go from house to house to *agdao-es* (to ask for a hen from each house and kill it, after which the meat is strung with a fine split bamboo and distributed among the houses) a hen of those who have chickens and wish to offer something to God; this is not compulsory if a man has no chicken. After the said dao-es we must perform 2 cañaos called *ubaya* and sagepsep in the abong, and the ceremony observed is the killing of 1 pig and 1 hen inside of the abong, and if the livers of the two are satisfactory and puffed up[31] then we can go to the country to work after seven days. This must be done yearly for we ought to follow the customs which we inherited from our forefathers. Since the first time when our town was inhabited by the original dwellers, the chief ruler was called *campo*,[32] and each man had to pay a tax of 8 centavos. In that time the Spanish tobacco graders were called rulers; there was then also a measuring of tobacco.[33] Both men and women had to pay taxes of 25 centavos each, and when the Spanish priests were scattered around, each man and woman had to pay taxes of 50 centavos, but in the year 1901, when the Katipunan was in control of the Islands, each man contributed only 20

[30] Mañg-mañg means to view or to look at. In this case, the author means that they will kill a chicken and look at its gall to learn the omen. Such metaphorical uses of mañg-mañg are common.—BEYER. See also Jenks, *Pub. P. I. Ethnol. Surv.* (1905), 1, 200, 208, 209.

[31] The manner of reading the omen from a chicken's gall is the same among all of the Igorot, Bontoc, and Ifugao peoples. If the gall bladder is full of liquid and has a smooth surface the omen is good, but if it is empty and the surface wrinkled the omen is bad.—BEYER.

[32] From *maestre de campo*, the title of a Spanish military officer of high rank.

[33] Governor Basco de Vargas established the government monopoly over tobacco in the Philippines in 1781. At first this resulted advantageously, but it was only a forced benefit both to people and government, and soon the evils of the monopoly became apparent. It was finally repealed in 1881.

centavos; and in 1903, we, the men, had to pay taxes of 100 centavos; in 1904, we had to pay a cedula tax of 1 peso, and road tax of 2 pesos—in all, 3 pesos. Besides these there is another tax yearly ever since the United States of America took control of the Islands.

We have also to relate in this section our custom when a young man marries a young woman, in order that they may be married; the relatives of both sides must be all gathered together and must make their customary ceremony for a wedding; they surround a *coobran* (jar) of tapuy with pieces of wood and erect a *bebe* (a piece of log) at the door of the house, and the ceremony that they perform is the killing of 5 hogs and some chickens; and after this wedding they cannot go very far away from home for a year. But when they have a child they perform a cañao called *bayas* as a *galut* (clothing) of their babe, and the ceremony that they must perform in this cañao is the killing of 10 hogs besides some chickens used for their habitual offering that we inherited from our forefathers. And this is the result and end of the offering as to our ways and living at Mabilili, but in order that the position of our place might be seen, we will mark out the rivers, brooks, and mountains.[34]

The barrio of Suagayan was named from *oaig* (brook), so called from a river on its eastern side. Customs are described as follows:

The custom of the forefathers in the ancient times when the young men and women married was a peculiar one; they did not get married (as the Christians do), but they were committed to two old men who witnessed their marriage. And they [that is, the old men] decided the day on which they must celebrate the wedding, in order that the husband and wife may live together in the same house. If one of the married couple wishes to be divorced[35] from the other, a fine of 1 carabao and punishment of 25 strokes is imposed upon him or her; this was the law of our forefathers in the ancient times. The organization of this village was quite good for we compelled all the lazy fellows to work and plant certain crops to feed themselves with. And thus our custom is that we must perform a cañao called begnas (just before planting and harvesting the crops) and two after the performance of begnas. We perform another cañao the ceremony in which is the killing of 1 hog. We must perform certain cañaos as offerings to God so that He may save our hogs together with our chickens.

[34] A rough plan accompanies the manuscript, which is not reproduced here.

[35] Worcester [*This Journal* (1906), 1, 850] says: "The Benguet-Lepanto *Igorots* are monogamous. Children are betrothed at a very early age and often marry at the age of puberty or even before. Strong attachments are not uncommon among the married people and divorce is relatively rare." Some men in Lepanto keep concubines. The manuscript Memoria aprocsimada says of marriage: "Among these heathen, the passion of love is unknown, because they marry when very young. In the negotiations the contracting parties have nothing to say, for on this occasion, they are subjected to the caprice and wish of their parents. The latter generally base their reasons on one of the two following things. The first is when two intimate friends have their wives with child at the same time; and they agree to bind their offspring together, if it happen that one bear a

BAGNEN [36]

In olden times this town was known by the name Bagnen. When the Spaniards were in control of this country, they called it rancheria [37] of Bagnen, but when the Katipunan were the rulers they called it a municipality, and now the present Government names it a township.

No one knows the exact time when this town was settled; the oldest men at this time and those who have been told of the history by their old people say that this town was organized before the Spaniards came to this country, and thus we do not know the names of the principales and settlers who were the forefathers of the present inhabitants of the barrios.

Four barrios form the township of Bagnen, and their names are as follows: Bagnen, Data, Laylaya, and Balintoogan.

In ancient times each of these barrios, except the last named, Balintoogan, was called a rancheria, and each of them had a gobernadorcillo, teniente mayor, *alguaciles*, and cabezas de barangay, who were the officials that governed their town, and they had appointments given to them by the comandante político militar who was in authority in the district. This was not then called a province but Distrito de Lepanto.[38]

son and the other a daughter. The second is when two friends have children, one a male and the other a female, whom they desire to be related by marriage. The contract having been made by the parents and the day set for the espousals, they advise the old woman who acts as priestess. The families assemble in the house of the parents of the bride. The drumbeat notifies the people of the village and neighbors that there is a function in that house. This is at the cost of the father of the groom. The people give 5 pesos to the father of the bride, unless the bride and groom are of importance. Then presents of 30 or 40 pesos are generally given, with which, together with what the father of the groom expects to spend, they buy basi, carabaos, and pigs which are taken to the house of the bride."

[36] Bagnen is located 22 kilometers east of Cervantes. It was out of the usual route of communication, and its inhabitants were more backward than those of other pueblos. During the time of the tobacco monopoly, considerable tobacco was raised in Bagnen, but after the repeal of the monopoly only enough for home consumption was planted. After 1890 some coffee was raised. See Perez, Igorrotes, 203–207.

[37] A name originally applied by the Spaniards to a small collection of huts. Some of the so-called rancherias in the Philippines approached a small hamlet in size.

[38] Teniente mayor, head lieutenant; generally head of a barrio. Alguacil, constable of the courts or of a municipal body. Cabeza de barangay, formerly the chief of the old Filipino government unit, the barangay. The Spaniards retained the title and made the office appointive or elective. The incumbents of this office were made responsible for the collection of the tribute and taxes, and each officer was supposed to be responsible for 50 families. They were subordinate to the gobernadorcillo, and together with him and all ex-gobernadorcillos and ex-cabezas de barangay, formed the principalia. See Blair and Robertson, ut supra, 17, 331; 40, 83, 347–349. Comandante político militar, the highest Spanish officer of any given military district. See Worcester [*This Journal* (1906), 1, 850]: "While all the settlements of the Benguet-Lepanto *Igorots* have their own govern-

The fourth barrio, named Balintoogan, was lately organized. This place is on a steep side of a large mountain between Bagnen, Sagada, and Besao. The people who are living there came from the villages of Ambasing, Balugang, and Amquileng. They left these (places) on account of the sinking and falling away of the ground and owing to fear they moved to the place which is now called Balintoogan.

There are no records showing the list of the officials of this town or the time when they served and thus we cannot give a true and exact account but nevertheless those whom we know and have heard of are as follows:

Names of 24 gobernadorcillos, 6 tenientes mayores, 7 cabezas de barangay, 4 presidentes, 4 vice-presidentes, 11 concejales or councilors, and 2 secretary-treasurers follow. These officials "served since the time of the Katipunan, who are succeeded by the present government," but they are not of sufficient importance to be reproduced here. The manuscript continues:

A SHORT DESCRIPTION

The township is situated on the steep sides of the high mountains; the people are very poor, because there is not enough good land for them to work; it is divided into small villages because the people found that the mountain side where they can plant camotes, a little maize, and other vegetables from which they could obtain their food was a rich land; camotes are the important food of the people of this town. There are some small parcels of rice fields owned by the people, but they are very hard to cultivate because they are made along the creeks and on hillsides, and they look like disarranged steps of vertical ladders; they cannot use carabaos to plow them because they are in such bad places. They must patiently dig and clean them, and then they can plant rice in them. They are always digging camotes, but rice can only be harvested in the time of *calgao* (dry season) on account of the cold weather in these places.[39]

RELIGION AND CUSTOMS

There is nothing to show or any proofs of any true religion which these people possess or follow, but they believe that there is a God and they call Him Cabunian;[40] they believe also in the souls of the dead,

ments, organized in accordance with the white man's law, there still remain *Igorot* representatives of the families from which came the chiefs of former days, who have more influence than have any of the present elected officials. Not a few individuals of these families have attained to considerable wealth."

[39] See Lillo de Gracia, Distrito de Lepanto, 39–41. See also a description of agricultural methods among the Bontocs by Jenks [*Pub. P. I. Ethnol. Surv.* (1905), 1, 88–107]. The rice terraces of the Ifugaos are one of the wonders of the Orient. The stone walls, many of which are of great height and exceedingly well made, have an appearance of great age.

[40] I doubt if Cabunian is the name of a deity. It is probably a place. In the Ifugao religion it is the name of the sky region where most of the greatest deities dwell.—BEYER. Beyer [*This Journal, Sec. D* (1913),

and call them anito; and their manner of praying or making offering is somewhat like that of the people in ancient time,[41] the only difference being that in ancient times when they made prayers or offerings they killed a sheep[42] for the ceremony; but now the ceremony that they observe whenever they make any offering to God (Cabunian) is the killing of a hog or a chicken.[43]

8, 99], speaking of the Ifugaos, says that Cabunian is the layer of the sky world "immediately above the Earth World, and it is the blue-stone underfacing of this layer that we call the 'sky.'" Fray Benito Herosa, O. S. A. [see Perez, *Pub. P. I. Ethnol. Surv.* (1904), 3, 243] identifies Cabunian with the sun.

[41] Of the religion of the Igorots, Alonso Martin Quirante (Blair and Robertson, ut supra, 20, 273, 274) says: "The Yglotes are an idolatrous race. They say that their god is the sky, whom they call Cabunian; and they offer and sacrifice to him, in their banquets and feasts, swine and carabaos, but under no consideration cows or bulls. The method of sacrifice practiced by them is [as follows]: Having tied all the animals not prohibited about the house of the sacrifice, after the ceremony an old man or old woman, having placed on the ground a painted cloth that resembles a surplice, and which they call *salili*, they proceed to kill the animals, and make a great feast. They keep that up for two or three days until they have finished eating what they have, when their feast or *magunito* also finishes. He who keeps up such entertainment longest, and kills most of the said animals is most respected." See also, Perez, *Pub. P. I. Ethnol. Surv.* (1904), 3, 137, 138, and Jenks, ibid. (1905), 1, 196–215.

[42] Thus in the manuscript, but probably a dog is meant, as no sheep are found in Mountain Province, except those brought in from outside, such as those now owned by the Jesuits at Baguio.

[43] See the description of a sacrifice witnessed among the Visayans in 1521 by Antonio Pigafetta, who accompanied Magellan, in Robertson, Magellan's journey around the world. Cleveland (1906), 163–167. See also, Blair and Robertson, ut supra: 3, 163–165 (Conquest of Luzon, 1572); 3, 198, 199 (Relation of the Western Islands called Filipinas, 1573); 5, 131–133, 163, 173–175 (Loarca's Relation, ca. 1580); 7, 185, 190, 191 (Plasencia, Customs of the Tagalogs, 1589); 12, 265–272, 302, 304 (Chirino, Relation, 1604); 13, 59, 72, 81; 21, 137, 138; 29, 284–286, 293, 294 (Bobadilla's Relation, 1640); 30, 190–192, 288, 289; 31, 145, 146, 155; 32, 55, 56, 248; 33, 167–171; 34, 319; 38, 219, 221, 236, 239; 40, 70–89 (Colin, Labor evangelica, 1663); 40, 167 (Combés, Historia, 1667); 40, 221, 223; 40, 335–339 (San Antonio, Chronicas, 1738–44); 43, 105 (Ortiz, Practico del ministerio, ca. 1742); 43, 124, 125 (Martinez de Zuñiga, Historia, 1803); 47, 301, 302 (Perez, Relation of Zambales, 1680); 48, 107, 125, 129, 132. See also, Perez, *Pub. P. I. Ethnol. Surv.* (1904), 3, 242, 243. Mr. Luther Parker, of the Bureau of Education, Manila, has seen the sacrifices still performed by the half-wild mountain people of Panay. They resemble closely the sacrifice described by Pigafetta. The manuscript above cited, Noticia aprocsimada, gives an account of sacrifices among the Igorots, especially of that called *jalujalu*, which is defined as the sacrifice of pigs.

They often do this, and there is no day designated especially when they have a celebration or feast to thank Cabunian for giving them a good crop to harvest, or for the increasing of their animals, their good health, or whenever there is a wedding (*bomayas*),[44] or when one of them dies. (Plate II, fig. 2.)

They surely believe that there are souls, and they say that anitos of their forefathers visit them frequently. They have also a belief that these anitos are the companions and helpers of Cabunian to look after the people, to give prosperity, and also to give hardship and bad luck to the people; if one of their children is sick, they say that the anito of their forefathers visited him and thus they must kill a hog or a chicken to feed him. They believe that this offering of food is eaten by the anito and that he will give health to the sick and cure him.[45]

According to their customs, whenever they go to any place or go to another town or the authorities call them, they must first have a cañao; or if they intend to do something they first perform a *mamidis*, the so-called *pidis*, which is that they must kill one chicken to see if its liver is satisfactory; if it is good and full they continue, but if it is unsatisfactory they stop and have another mamidis (to kill a chicken and see the liver).

When they are already on the way, if a crow, mouse, snake, etc., runs across the road, they at once stop their journey. They say that it is bad luck or that the object of their journey will not be accomplished or that it will turn out badly. For that reason they must stop for a while or else return to the town which they started from.[46]

It can be seen that there exists great union among them, for when one of them has something to do and cannot do it alone all the people will agree to help; when one is going to build his house, all the people must help him to secure all the materials and other things needed and help build the house asking no pay.[47]

If there is a person of any kind who asks a shelter in their house, they feed him and request no pay; they are humble and obedient to the orders of the authorities.

BANAAO [48]

"Official names of the barrios are: Banaao, Dacudac, Pandayan, Lebga, Cagubatan, and Cada-anan."

[44] A bumayas is not a wedding. It is a great ceremony given only by members of the aristocracy as a public demonstration of their right to their titles. It is often given by an aristocratic couple immediately following their wedding ceremony.—BEYER.

[45] See footnote 9.

[46] These superstitions were common in early times to all the peoples now called Filipinos. Cf. Blair and Robertson, ut supra: 7, 189 (Plasencia, Customs of the Tagalogs, 1589); 40, 341–346 (San Antonio, Chronicas, 1738–44). There are many references in Philippine documents to this superstition.

[47] But they expect to and do receive a very considerable quantity of food and drink.—BEYER.

[48] Banaao is located 18 kilometers south of Cervantes. It is the center of extensive rice fields. See Perez, Igorrotes, 141–152.

"The barrio of Dacudac was formed into a barrio on August 31, 1908; the five other barrios were formed in olden times; the old men living now have no idea as to when these barrios were formed."

The names of the original families and of the officials as far back as known follow. The manuscript proceeds:

CUSTOM OF DRESSING OF THE IGOROTS

For an Igorot one suit of clothes is sufficient for a year; this consists of a handkerchief, a blanket, and a G string for the men and of a camisa, a tapis, a waist bandage, and a string of head beads, which they call *banges*, for the women.

The women in this township do not wear their hair any longer than it is worn by the men; the headwear of the men differs from that of the women. The women can only use a string of beads; they are not allowed to wear anything like the men's head string. The men's headwear is a piece of cloth or handkerchief which they wind around their head; they are not allowed to wear the head ornament of the women.[49]

The "muebles" [that is, possessions or property] of the Igorots consist only of *pupputic* (jars).[50] There are many different kinds, such as *bunay, sinal-itan, inot-otot, pucao, guilas, pinaypayao, tinodco, lungboy, bimaog, guinalman, lucian, saoit,* and *gayang;* and also a string of gold, which resembles a necklace and is called *camaqui.* All these properties are held very sacred by the Igorots, and they must not be sold; they would rather have their rice land sold than these properties, because they regard them as sacred relics of their forefathers.[51]

The jars are used to make tapuy in, a drink made out of rice which they drink at any time as it is a means of diversion for them; the jars and other things are also used in the celebration of cañaos.

[49] Alonso Martin Quirante (Blair and Robertson, ut supra, 20, 269) thus describes the clothing of the mountain people in 1624: "The usual dress and clothing of that people is a loose shock of disheveled hair that reaches below the ears, and certain bands about one *jeme* [span] wide made from the bark of trees. Having wound these about the waist, they twist them so that they cover the privy parts. They call these *bahaques*, and they are worn by all classes of people, men and women. Besides the said bahaque, the chiefs wear Ilocan blankets, which they have inherited from their ancestors; this garment is crossed from the shoulder to the waist, where they knot it. Thus do they go, without any other clothes or shoes." See also footnote 26.

[50] That is, things made of clay. *Putik* is a common northern Luzon word for clay or mud.—BEYER.

[51] Throughout the entire extent of the Philippine Archipelago are found jars of Chinese origin, mute witnesses of the great extent since the earliest times of Chinese trade. Many of them are centuries old, and are considered among the most priceless treasures of their owners. See Jenks, *Pub. P. I. Ethnol. Surv.* (1905), 1, 117–121, for a discussion of Bontoc pottery. See also Cole and Laufer, Chinese pottery in the Philippines, *Field Mus. Pub.* (1913).

All Igorots have tapuy in their houses; it is for them a kind of a household god; they always have tapuy set aside for drinking purposes, and no matter how much they have on hand it is sometimes drunk up in one day, because when the Igorots gather together and sit around in the shade without having anything to do, and they just feel [like drinking] it, they go from one house to another to hunt for tapuy, and when they find some, although the owner may be absent, they drink it all without regard to what the owner might say upon his return. When the owner returns and finds his tapuy gone, he can't say anything, because it is their custom to do so. (Plate II, fig. 2.)

SUPERSTITIONS OF THE IGOROTS WHEN GOING AWAY FROM HOME

When an Igorot goes anywhere and a bird of any kind flies across the trail ahead of him he discontinues his journey because it predicts a failure of his purpose or he might get into trouble; but, if he insists on going ahead in order to avoid delay, he must stop for about a half an hour right at the place where the bird crossed the trail, or else he must return to his home and make a new start.

IGOROT CUSTOMS

The Igorots have a custom of going to sit nearly every day in a high place from where all the trails and roads leading to the town can be plainly seen;[52] there they do nothing but clean themselves of their head and body lice (*coto*, head louse; *toma*, body louse); one Igorot cleans the head of another and so on. While sitting around that way they do also some simple work, such as making baskets, which are called *taddo*, *balloco*, *labba*, etc.[53] In each of the barrios there is a little house called

[52] Alonso Martin Quirante (Blair and Robertson, ut supra, 20, 269) says: "Their settlements are established on the peaks of the mountains, and on the roughest of them, whence afar off they can see all the paths, so that no one can approach them without being seen by their sentinels, who always guard their posts day and night."

[53] Labba is the term employed by the Ilocanos for the large carrying basket. The following information was furnished by the Bureau of Education in Manila. "Relative to Lepanto-Igorot basketry in general the following information can be given. Nearly all Igorot baskets are made entirely of rattan. Other materials, such as *nito*, are sometimes used in decoration. The rattan may be dyed black, red, or yellow for decoration. Two methods of construction are used: binding and braiding. The former is most common. It implies the employment of rather strong strips bound together by smaller pliable strips. By this method rigidity, beauty, and any desired shape can be secured. Large *tampipis*, vase-shaped storage and carrying baskets, and small trinket baskets of all kinds are made by this method. Baskets made by the latter method are pliable and not so pleasing to the eye. They are made entirely of narrow pliable strips braided together. Winnowing trays and rude carrying baskets are the principal products of this method." The following note was furnished by Dr. Merton L. Miller of the Bureau of Science: "In the Philippine museum all the basketry from Benguet and Lepanto is grouped together as there is very little, if any, difference between the basketry of the two subprovinces. It consists of carrying baskets;

dalipey (tribunal), where the young men over 8 years of age and the widowers sleep. Boys and girls old enough to wed do not sleep in their parents' home; the young women seek the houses of widows or women that are not living with a man and sleep in their houses as long as they are not married; the children sleep in the house of their parents.[54]

A young man that has been sleeping for some time in the dalipey that wants to get married and has already found a girl that will have him, gets two or three old men to go to make a marriage agreement with the parents of the girl; the only point which they have to settle is the *sabong* (dowry)[55] that the man is to give to the bride. If the sabong is satisfactory to the girl's parents then they kill a rooster and a hen and get some tapuy. If the gall of the chickens proves unsatisfactory, they kill two others and so on until they find two whose galls are satisfactory; the expense for this is borne by both parties.

The old men commissioned by the bridegroom also send after his father, but not until after the agreement about the dowry has been settled; and these old men are considered as the witnesses to the marriage; the girl's parents send after the young man to live with their daughter after three days have passed, although this time can be extended to one or two years. The husband and wife can be divorced at any time they wish, without anybody being able to prevent them from doing so. A divorce is sought for the following reason: If they have no children, despite the continued observance of the *pasang* (a prayer to the anito to give them children). If the husband is the one that first suggests a separation, the dowry given by him to his wife will be left to her, but if the woman first suggests the separation the dowry will go back to the husband, but what property they have accumulated during the time that they have been married will be shared equally between them. The divorced parties must not have any hard feelings toward each other during their lifetime.

ANOTHER CUSTOM OF MARRYING

The parents of both the boy and girl have a talk with each other and make an agreement to marry their children; the boy's parents turn over to the girl's parents the dowry agreed upon, which remains in their possession; if rice land, they work it until the children get old enough to marry; the profits therefrom are used for the maintenance of the girl; when the children are grown up and then refuse to marry each other, the dowry is returned to the boy's parents.

carrying frames; pouches worn by men and women; storage baskets; hats; baskets for carrying eggs, ore, and fish; and fish traps. These are made almost entirely of rattan and bamboo." Cf. also Jenks, *Pub. P. I. Ethnol. Surv.* (1905), 1, 121–123.

[54] Dalipey, see footnote 17. Beyer says that the sleeping customs of the Lepanto Igorots are the same as among the Ifugaos and that there is no public sleeping house for girls as in Bontoc. But see page 493, where a communal house for girls is described. This may have been borrowed from the Bontocs.

[55] See footnotes 14 and 35. The dowry, which was always given by the man, was an important condition of marriage throughout the Philippines.

HOW THE IGOROT WORKS

The women do all the work in the rice and camote fields; they till the soil by means of iron bars; they transplant the rice and also cut the rice when it is ready for harvest; the men only help the women to build the walls in the rice fields and to carry home, once a day, part of the rice that has been cut by the women.

The men's work consists in pounding out the rice from the palay, getting the water for home use, pasturing the animals if they have any, cooking their rice, feeding the hogs, taking care of the house, and carrying the baby around.[56]

To build or remove an Igorot's house is very easy; no nails are needed, only split bamboo is used to join the house together; the house is constructed out of lumber, it has only 4 posts; the boards used are 1 decimeter thick, 4 decimeters wide, and 2 meters long.

When an Igorot intends to remove his house, he prepares two big jars of tapuy with which to entertain the people at his house; at twilight he sends a man to notify his neighbors and townspeople that he intends to remove his house to another place the next day, so that all those who were so notified will not go away but come and work on his house that day; this house is built entirely during one day's work. When it is completed, they drink the tapuy that has been prepared for them, but eat no food.

CLIMATE

The climate of Banaao is pretty cold throughout the year; we raise two rice crops a year.

There are no more old barrios left in this township in which any of the present inhabitants were born.

All the people living in any of the barrios, comprising this township,

[56] Lillo de Gracia, Distrito de Lepanto. Manila (1877), says: "The Igorot woman is the one who attends to the planting, and on that account she is away from home most of the day. The man only plows the field and builds the rock walls of the fields. After these labors the men only attend to public matters, and even in the performance of the latter tasks, it is usual to see the women substitute the men. The children accompany the women. Meanwhile the man stays at home, cooks the rice and other food, and amuses the nursing children while their mothers are away. They give the children masticated *morisqueta* [cooked rice] from their own mouths. It would not be imagined that a robust, agile man, well able to work, should lend himself to so feminine an occupation and pastime, unless this was a fitting custom of the law that belongs to woman among heathen people of backward intelligence. On the other hand, the men are wont to work for a medium wage, far from their own neighborhood, and for a very small sum do not hesitate to carry heavy loads. They are good cultivators, and are always eager to get seeds and plants unknown to them." The report just cited is excellent and the work of a good observer. Lillo de Gracia was comandante politico militar of the district of Lepanto. Among the Bontocs, some care of the children devolves on the men. See Jenks, *Pub. P. I. Ethnol. Surv.* (1905), 1, 134–136.

observe the same custom and manners in the celebrating of the 9 following described cañaos:

1. Cañao called *bagaoas*. This cañao is attended by all the people who have a house of their own in the barrio that celebrates the cañao; this is an offering to the anito that they may have a good rice crop and [that the anito may] protect their rice from the plague of mice and keep their grain from drying up.

The ceremonies gone through in their cañao are the killing of a hog in the yard of a deserted house, called *ao-a*. After the hog is killed, one-fourth of the liver and one-half of the breast are strung on finely split bamboo and dropped into boiling water; after this is boiled it is taken to a particular place, together with a dish of rice and a dish of tapuy, all of which, an old man, accompanied by a prayer, offers according to custom to this particular anito; after the ceremony, the old man, who made the offering, takes for himself all the provisions set aside for this ceremony; the rest of the meat is sold to anyone who wishes to buy some. Then they also make an offering for the protection of their rice from the plague; this meat, so used in this cañao, is cooked and eaten the same as any other meat.

2. Cañao called *quesley*. This cañao is an offering and prayer to the anito to protect them against any kind of sickness or disease.

The ceremonies for this cañao are the killing of a hog (the hog is burned); after the hog is killed, one or two old men take their spears and sit down facing the killed hog, which they offer to the anito, together with a dish of rice and a dish of tapuy; as is the custom after the prayers are said, these two old men, together with others, examine the gall. If it is large and puffed up, the sickness, if any, will be cured within a few days, but if the gall is small and bad they kill another hog; and if this gall is still bad they continue to kill hogs until they find one that has the right kind of a gall, but if the man killed the last hog that he can buy or can get, and the gall continues to be bad, then they give up hope and the sick person's life is in danger.

3. Cañao called *bayas*. This cañao is a feast of rejoicing in which the Igorot shows his affection and good will toward his neighbors, town mates, and other friends.

The ceremonies made in this cañao are the killing of 2, 3, 5, 7, or 12 hogs; in addition to this, horses, cattle, carabaos, goats, sheep [sic], chickens, and other animals that the person giving the cañao wishes to kill.

In this cañao there is always more meat than can be eaten by the visitors to the cañao; the rest of the meat that is left from one day's cañao is cut into small pieces corresponding in number to the neighboring houses, relatives, and friends who are living in other places, [and] this meat is then distributed among them. This cañao can also be made in honor of one who is dead, but without any kind of music; but if it is only a feast *ganzas*[57] are used.

The one giving this cañao must stay in his house for ten days without coming out and without speaking to anyone except his housemates, nor must anyone go into his house or even into his yard during those ten days.

[57] Ganzas, the brass gongs used throughout the Orient, and probably of Chinese origin.

4. Cañao called *tongcala*. This cañao is to the anito to whom offerings or promises have been made by a person while sick [who] says this, for instance, "I shall offer up a hog, together with music, according to the custom, if my sickness be cured."

The ceremonies observed in this cañao are the killing of a hog; an old man, accompanied by ganzas, takes the head of the hog, together with the liver and a little of the meat (muscle), and puts them on the end of a dry piece of wood covered with the tops of sugar cane or with the whole plant; after holding this meat up on the end of the piece of wood, it is taken off and cooked and eaten by the people; the person giving this cañao will have to stay in his house for ten days.

5. Cañao called *baquid*. This cañao is celebrated in case the water used for irrigating the rice fields sinks into the ground and in that way passes the rice fields that are to be irrigated.

The ceremonies for this and for the increase of the water are as follows: An old man goes with the owner of the field to the place, taking with them a small pig, a chicken, and a basket, which are needed when they eat; upon arriving at the place they kill the pig and the chicken and offer them up to the anito of the fields; after the ceremony is over they cook and eat them; the person who makes this cañao must stay in his house for one day.

6. Cañao called *pacde*. This is a cañao by all the people of one village or barrio to the anito so that he may give them a good crop of rice and other crops and make the grain fill out good.

The ceremonies gone through in this cañao are the killing of a hog in the following manner: The old men bring with them a hog covered with a shield and spear, and taking it near the edge of the barrio there they kill (burn) the hog and cut it into pieces for an offering to the anito; they look at the liver, and if it is good they do not kill another hog, but if it is bad they kill hog after hog until they find one with a good liver.

The meat of the killed hog is not eaten by the old men who only eat the liver; the meat is cut into as many pieces as there are houses in the barrio that is giving this cañao; the meat of every hog that is killed in this cañao, is divided to correspond to the number of the houses. Each piece of meat is strung on a split piece of bamboo and so distributed among the houses.

The value of all the hogs killed is figured up and the amount is divided by the number of houses; when it is determined what the share of each will be, they pay it to the headman or chief of the cañao, and he pays the owners of the hogs that were killed.

This cañao is celebrated twice a year, before the planting and harvesting of the rice. During this cañao, every one not living or belonging to that barrio is driven away, and nobody is allowed to enter the barrio, except the officials who pass through or whose duty it is to come to the township, who may be allowed to enter.

Across all paths and trails leading into the town or barrio that is celebrating this cañao a design of green leaves is made into an arch, which is the sign that no one may enter.

None of the people of the barrio in which this cañao is held are allowed to go to another barrio or other place while this cañao is going on, and every one must take great care of his animals, chickens, etc.,

for it is a bad omen should a hawk or other bird take away the little chickens.

7. Cañao called *pasang*. This cañao is celebrated by married people who have lived together for a certain length of time, but who have neither sons nor daughters, in order that they may have children.

The ceremony in this cañao is the killing of a hog to be offered up in the yard of the married couple, together with the things needed in the house, such as a turban of beads, camisa, belt, etc., all things used by the man as well as by the woman, and some money in addition to the above things. All these things are put together into a big wide flat basket; the woman takes the basket on her head and starts to dance and the man dances around her for about an hour, accompanied by the beating of a ganza or *salibao* (drum). The married couple must not do any work for two days.

8. Cañao called *palis*. This cañao is for the protection against poisoners and that the poison used by them may become harmless.

This cañao is principally performed when a person is sick; it is for the purpose of finding out the real cause or reason for the person's sickness; but, if it is known that the person was poisoned, then this cañao is for his cure (medicine); the ceremony in this cañao is the killing of a dog, a cat, a hen, a turkey, a duck, or a goose. If every one of these animals has a bad liver, the person will die, but should they have good livers then the person will be cured and will become well.

9. The cañao that can be performed daily is the killing of a hen or other chicken; the Igorot can make this cañao as an offering or prayer to the anito when anyone is sick; if he kills a chicken the anito will cure his sickness, providing that the chicken has a good liver.

If anyone intending to go on a trip cañaos [that is, makes a cañao with] a young chicken or a hen having a good liver, he will have a good trip; if he is accused of anything or some one makes a complaint against him, he kills a chicken; if he finds the liver good, he will win; but if bad then he will surely lose; the meat of these chickens is eaten.

The person making this kind of a cañao is forbidden to go to the country or other place to work for one day and during that day he is also prohibited from speaking to anybody except to members of his own household and no one is allowed to enter his house during that day.

The real sign of the termination of any one of these nine cañaos is that on the morning of the third, fifth, or tenth day, as the case may be, the person giving the cañao goes to a brook or river, a little way from his house to bathe; he takes with him his spear and sticks a long chicken feather in his hair. In this manner he informs the people that the cañao is over.

On the last day of the cañao and when he goes to the river to bathe, he does not speak to anyone nor does he look behind nor beside him; should anyone speak to him, he will only shake his head.

Everybody knows just what kind of a cañao anyone is performing, because a certain kind of a bunch of green leaves is put up at the gate in front or at the side of the house.

During the celebration of any one of these nine cañaos, no one taking part in them can do any kind of work in the country or other places, [but] in their own houses they are allowed to do certain kinds of work. The people are prohibited from working or from leaving their

house when they celebrate any kind of a cañao, especially during the cañaos called "pacde" and "palis," because if the people living in the barrio where the cañao pacde is being held go to the country or other places to work, they will have a bad harvest of their crops during one year. If during the cañao palis the people go to work in their fields they will have no water for their fields for one year; and if they work on their *lapog* (*caiñgan*) [58] it will dry up as there will be no moisture.

BAUCO [59]

Bauco township has 4 barrios; namely, Guinzadan, Vila, Ibanao, and Bauco. Guinzadan, one of the oldest places in the province according to the manuscript, was formerly called Liliteg, "but when a big flood came and destroyed the town and cut it in two by a river they changed Liliteg into Guinzadan which means, damaged by water." The Spaniards established a government in this barrio after several campaigns waged against the Igorots of the district. The names of many officials are given. The barrio of Vila was so called "after a certain kind of soil that can be made into pots and pans." The story of its settlement is as follows:

One time there was a famine in Qiapan and the married couple, Tayapan and Guislan, ran away to Guibasan Mountain and there they built themselves a hut according to the Igorot ways; a short time after Taycapan and Yang-gacao followed them to that place, and they did not go back to Quiapan any more, and so became the forefathers of the people of that place.

In due time a Spanish government was established in Vila, and after that "the Katipunan controlled this town for a short time" and until the coming of the Americans. The barrio of

[58] The caiñgin method of farming consists in a progressive deforestation, that is, small areas of, say, 1 to 5 hectares are felled and burned, then planted to rice, camotes, maize, yams, beans, etc.; by the end of the second season, however, so much cogon and other grasses and weeds have become established in the comparatively rich new forest soil that their influence upon any successive crop would be very great; usually, therefore, only 2 crops or perhaps in some localities 3, are grown in each cleared space; cogon then takes possession of the clearing and this, being burned every dry season, soon reduces the humus content in the otherwise rich soil (the mineral salts in the ashes readily leaching out in the rainy season). This is a most pernicious and reprehensible practice considering the waste of good land, first, through allowing cogon to enter the clearing, and secondly, through burning the cogon every dry season, thereby killing all forest seedlings and rapidly exhausting the humus. The method has been extensively used in the mountain regions.—BARRETT.

[59] Bauco is located 18 kilometers east of Cervantes. Its inhabitants are industrious and possess many rice fields and at one time raised many cattle. See Perez, Igorrotes, 191–193.

Ibanao received its name "because there was a lake in the middle of it." The story of its foundation is as follows:

Smallpox broke out in Quiapan, Bauco, and all people attacked by this disease died. Ando and Doma, a married couple, ran away to Patog-ó Mountain, and there they built a small hut; later Tanca and Andeo went after them to the same mountain and lived with Ando and Doma; as long as they lived there they never returned to Quiapan, the place where they came from, and they were the forefathers of the people.

"After the administration of the Spanish government, the Katipunan ruled these places for a short time," but the latter was defeated by the Americans.

BARRIO OF BAUCO

The ancient story of Padoca and Adian[60] who lived in Tabeo Mountain. The man was Padoca and the woman was Adian, their first child was a boy named Opig, the second was a girl named Daoquen; when the children grew up and there was no one to marry, they married each other; when this family increased in number, they looked for a spring and a good place where they could till the ground; they found the mountain called Quiapan and settled there, and when the people grew more in number, they named the place Bauco. There also came people from other places. Not long after this Comandante Casanuba,[61] who lived in Cayan, arrived there; he came with many guardia civil and many people of Cayan, and fought against the people of Bauco. After the fight they received a cane of authority from the rulers.[62]

The Spanish, Katipunan, and the Americans in succession governed the place. Various customs are described as follows:

MARRYING CHILDREN

Boys and girls that are old enough to marry don't sleep in their homes with their parents; the young women go every night to the house designated for them to sleep in, and the young men go to sleep in the atato (tribunal).[63]

[60] The fragment of an origin myth.

[61] Casanova. Probably before 1852, as the names of the comandantes politico militar, up to 1890, do not show this name.

[62] A tasselled cane given to the chief official of a pueblo in Spanish times as a badge of authority.

[63] See footnote 54. See also Lillo de Gracia, Distrito de Lepanto, 27. Among the Bontocs, the girls sleep in a communal house called *ólâg* from the time that they are about two years old until they marry. The Igorots of Bauco may have borrowed this custom from the Bontocs. Among the Bontocs ato is used to designate one of the political units of the township. The at-ato of the town of Bauco evidently combines the functions both of the Bontoc pabufunan and fawi. See Jenks, *Pub. P. I. Ethnol. Surv.* (1905), 1, 49–55.

At night time, young men go to the house where the young women are sleeping; if a young man that has been sleeping for some time in the at-ato wants to get married he tells it to the young woman whom he likes; the young woman, if she likes the young man, tells him to go to find firewood which will be taken to the house of the woman's father; the young woman goes to the house of the young man's father and brings him camote or rice as a sign to the parents that their son and daughter want to get married. After these ceremonies the parents of the young man and woman make an agreement that the young man shall go to the house of the woman's father and perform a cañao with a chicken. Three days after the performance of this cañao, they perform another cañao with a suckling pig. When they have been living together for one year, they get 3 or 4 hogs and with these hogs they again kill a suckling pig which shows that that day the last cañao has been performed.

THE IGOROT CUSTOMS

The ancient people used the bark of trees for G strings and their hats were made of fine splints of bamboo; the women made their tapis out of the fibers procured from certain kinds of trees.

When a man has a complaint to make he gathers all the old men together and tells them his complaint. The old men, after they have heard the complaint of the plaintiff, call the defendant or accused and let them speak face to face and listen to the matter. After the old men have heard the cause of the dispute of the two fellows and they have no witnesses, they let them prick each one's head with a needle; the one whose head bleeds will lose and he whose head does not bleed will win; or they let them throw a stone at each other and the one who hits the backbone is the winner; if the old men don't want to try the case in [one of] these manners, they get 2 chickens from one hen and give one to the plaintiff and the other to the defendant; each one then burns his chicken and cuts it in two before the old men. The owner of the chicken whose gall is the larger loses and the one whose chicken has the small gall wins.[64]

At the beginning of planting rice in the seed beds, all the people perform a cañao with a hen or rooster; before the transplanting of the rice plants in the field, they perform another cañao with a chicken, and after the performance of this cañao they must transplant all their rice plants to their rice fields. After the transplanting, they again celebrate a cañao with a chicken, which shows that they have finished rice planting.

Before the beginning of the rice harvest every one is prohibited from leaving his town or his house, because all the people must perform a cañao within ten days. The ceremony they make in this cañao is the

[64] Cf. trial by ordeal among Filipino peoples as related by various authors in Blair and Robertson, ut supra: 16, 129 (Morga, Sucesos, 1609); 40, 85, 86 (Colin, Labor evangelica, 1663); 40, 152–154 (Combés, Historia, 1667); 40, 343, 357 (San Antonio, Chronicas, 1738–44); 43, 109 (Ortiz, Practico del ministerio, ca., 1742); 43, 123 (Martinez de Zuñiga, Historia, 1804). See also, Lillo de Gracia, Distrito de Lepanto, 20; and Jenks, *Pub. P. I. Ethnol. Surv.* (1905), 1, 168–171.

killing of a hog or a chicken; ten days after this cañao an old man of the township goes and kills a hog or a suckling pig near the foot of a large tree, and after this they may harvest the rice; after harvesting all their rice the people perform a cañao as a sign that they have finished the harvest. The ceremony they make in this cañao is the killing of a chicken.

After the planting of camotes, the men with spears and shields go to the mountain to pray to the souls of the dead persons and when they have returned home they all go to the tribunal or abong; the head or chief of the tribunal takes a cup of water and a spear and puts them in front of the tribunal and prays.

The next morning he gets a dog or a chicken which they kill and cook and place in a dish and set it in a certain place; this is the food for the dead that they called to when they went to the mountain.

When a certain kind of cañao is being performed, all the roads or streets or paths leading into the township are closed in order that the people from other towns may not come into their town.

The man who begins to build a house and sees a mouse does not continue it, for he thinks that it is very bad luck. After the materials for a house are collected and the house is built, if the owner of the house sees a snake or a mouse before he has occupied the house, he removes his house to another place. After the erection of the house when it is removed, if the owner does not see a dog, a crow, or a snake, he performs a cañao with a chicken; three days after this cañao, he again performs a cañao by killing a suckling pig; after all these things are done, if the owner does not dream any superstitious beliefs regarding his house, he moves into it and does not leave it for three days; he again performs a cañao with the ceremony of killing a chicken; but when he dreams something bad he will leave the house and find another place where he may build his house.

Igorot names for the months of the year.

Libtong, January.	*Hoa-ó*, July.
Atong, February.	*Leppas*, August.
Panlitonan, March.	*Tioay*, September.
Becas, April.	*Tiguey*, October.
Deam, May.	*Quiling*, November.
Adug, June.	*Esec*, December.

Each month of the year is named or called by the Igorots according to the climate, weather, or season of that month, also by the birds and the things they did during that time.[65]

[65] This is a very common practice in all parts of the world. A manuscript history of the Visayas in the possession of the Philippine Library gives such a calendar that purports to have been handed down from as early as 1543. Mr. H. Otley Beyer, of the Bureau of Science, and Mr. Luther Parker, of the Bureau of Education in Manila, have both gathered important data of early calendar systems in the Orient, which it is hoped will soon be published. Quirante says (Blair and Robertson, ut supra, 20, 274) that the Igorots do not "know what day, month, or year, or the increase and decline of the moon, signify. They govern themselves by one

[Continuation of footnote numbered 65.]

star that rises in the west, which they call *gaganayan* while they call the natives of the neighborhood by the same name. On seeing that star they attend to the planting of their waste and wretched fields in order to sow them with yams and *camotes*, which form their usual and natural food." Cf. also, Blair and Robertson, ut supra: 5, 165 (Loarca, Relation, ca. 1580); 7, 189, 190 (Plasencia, Customs of the Tagalogs, 1589). Mr. Otto Scheerer, of the Uuiversity of the Philippines, in a letter to me very appropriately warns against considering the native words of the calendar of the above text as the exact equivalents of the months of our calendar. They do not indicate divisions of thirty or thirty-one days. Mr. Scheerer says:

"Their names indicate the beginning, lapse, or end of rural occupation or natural phenomena, which used to take place at more or less the same time indicated by our moons, but are far from being so sharply defined and are really more in the nature of 'seasons,' such as our 'harvest,' 'fall,' etc. Bauco, being a town in Lepanto, the words [of the calendar in the text] should be, so far as I know, Tinguian, a dialect of which I possess very scant information and other people, too, I believe. We possess, in the matter of linguistic data concerning these Islands, such a mass of confused and unreliable information that I should hate to see it added to in the more enlightened era of investigation by Americans. I notice that these names must have been taken down by some Filipino from the lowlands, since they show the characteristic Spanish orthography current among the Christian population of the Islands. This spelling is, however, also found adopted by one or the other literate Igorot. All I can do is to compare them with identical or similar words in other known dialects from northern Luzon, without, however, vouchsafing, in so doing, that there exists an actual identity of meaning.

Libtong. This word occurs in the same form in Ilocano, where it means lake or ditch of stagnant water.

Atong. In Isinai the word *atung* means heat, warmth, sickness. In Ilocano *atang* designates a superstition consisting in placing the first pickings of some fruit, a plate of meat, or of any other food, in the corners of the house, in the garden, or field, or somewhere in the mountain, in order to appease some malign spirit. In Ibanag atang means any kind of herb used as a vegetable. The change from 'o' in atong to 'a' in atang might be nothing else than a different pronunciation of a certain indistinct primitive sound well known to linguists as the 'pepet vowel.'

Panlitonan. This word is unknown to me. In structure it is characterized by prefix pan and suffix an, which often help to form words indicating either the place or the time where or when the action indicated by the stem is executed, so that panlitonan may mean the time when that is done which is expressed by liton.

Becas. In Inibaloi, *bekás* means hulled rice, which in Ilocano is *bagás*, in Tagalog *bigás*. Observe here again the indistinct (pepet) vowel-changing from 'e' to 'a' and 'i.'

Deam. This is an unknown word. It might go back to a form dalam, dayam, dagam.

Adug. In Ilocano and Pampanga (and old Tagalog?) *alog* means inundated, low-lying land (whence, tagalog, dweller on such lands). The changes from 'd' to 'l' and from 'u' to 'o' are very common.

[Continuation of footnote numbered 65.]

Hoa-ó. This is an unknown word. I refrain from speculation on a possible identity of this word with similar words in other dialects.

Leppas. In Ilocano, leppás means the time when something (a work, the year, the day, etc.) finishes or is finished. In Bontoc, *lípash* is a season beginning about July 1; lípash expresses the idea of finishing or accomplishing.

Tioay. This is an unknown word.

Tiguey. In Inibaloi, *tige* is the word for maize. In Ilocano, *tigi* is the name of a plant whose tubers are fed to pigs.

Quiling. In Ilocano, *kiring* designates the time when the rains cease. The change from 'l' to 'r' offers no difficulty. I have no doubt that we have here the same word.

E-sec. In Ilocano, *isek* is a kind of early rice. In Inibaloi, *asak* gives the idea of planting; the vowels are indistinct. In Bontoc, *iseg, ishek, issek* express the idea of sowing, planting.

"If we remember that Igorot calendars divide the year generally into sections that are named from the characteristic field work undertaken at the various periods, or from plants flowering, or birds appearing, at such times, we may safely set down, I believe, the present calendar as coming fully within this general description."

See also, Jenks, *Pub. P. I. Ethnol. Surv.* (1905), 1, 219, 220.

Some additional information has been received through Mr. D. M. Thomas, division superintendent of Mountain Province. This was obtained through the interest of Mr. C. H. Magee, assistant director of Education. Mr. Thomas cites as his authority "Rev. M. Vanoverbergh, the Belgian missionary at Bauco, who is compiling a vocabulary of the local dialect and his accurracy cannot be questioned as in all his work he is exceedingly methodical and accurate." According to the above authority, the names of 11 periods of time used in Bauco, reckoned roughly from new moon to new moon, are as follows, beginning near the first of the Gregorian year:

Lúya.
Lede'w.
Upóc.
Bacákew. Sorghum.
Kitkití.
Kiáñg.
Wáo. The name of a red hairy caterpillar.
Panabá.
Tíway. The name of a sparrow; going away.
Adug.
Kíliñg. Furious fighting.

The words as given in the document belong to the Lepanto-Igorot dialect as spoken in Bauco, with the exception of libtong. The root of panlitonan is a Bauco form, although the word itself is not used by the Igorots of the township of Bauco. Libtong is an Ilocano word meaning a pond, marsh, or swampy place. The meaning of the words of the document that can be identified by Father Vanoverbergh are as follows:

Átoñg. Heat.

Panlitonan. This is a Cayan word, meaning the time when the palay heads. *Litun* means pregnancy, but the term is applied, even in Bauco, to palay; with the prefix pan and the suffix an it is used only in Cayan.

Déam. Rainy season.

Waó. Thus accented, it means eight.

Lépas. A cañao celebrated after the harvest.

Tégey. Coarse cloth.

Eséc. Seed; *is-éc,* to sow.

BESAO [66]

The material for this township furnishes some very interesting and important data. The township contains 8 barrios; namely, Besao, Payeo, Ambaguio, Padangaan, Abeo, Ayubo, Banguitan, and Agaua. The township, which was organized in 1904, contains a population of 3,502, all Igorot and pagan, except the family of the secretary-treasurer, which is Christian. A list of officials since 1904 is given.

HISTORY OF THE BARRIO OF BESAO

We, the old men of this barrio, caused it to be written, stating the facts as they have been handed down to us from our forefathers, who were the original people of our barrio.[67]

Ganggang-á and his wife Casindo of Lamaoan came to make their home in a place, now known as Besao, owing to the fact that their means of making a living had become exhausted in Lamaoan. Ganggang-á said to his wife, "We would better leave our home and find another place where we can make our living." Ganggang-á had a sister by the name of Abay; when Ganggang-á and his wife decided to move, Abay, his sister, did not want to accompany them, but decided to go down to a town called Busalan, a barrio of Candon, in the Province of Locus [that is, Ilocos] Sur, where she eventually married. Ganggang-á and his wife went in the opposite direction looking for a good place where they could settle; on their way they stopped at a place now called Besao to rest for a couple of days, during which time Ganggang-á looked around for a place to make their home. He observed that the land around there was very fertile, so they decided to remain there. During the long time that they had to wait before their camote patches began to produce, they lived on nothing but vines and wild gabe.[68] During the course of many years they had 4 children, 2 girls, named Lagmaya and Golla, and 2 boys whom they named Madalang and Laongan. After these children became men and women their father wanted them to get married, but there were no other men or women in the place now called Besao whom they could marry, so they intermarried. Madalang married his sister Lagmaya and Laongan married his sister Golla; Madalang had 6 children by Lagmaya, 4 boys and 2 girls, and Laongan had 5 children by Golla, 2 boys and 3 girls. When Madalang and his brother Laongan's children became old enough to marry, they intermarried with their sisters, with the exception of one, the youngest son of Madalang, because there was no girl left for him to marry. Therefore, Ganggang-á

[66] For a description and partial history of Besao, see Perez, Igorrotes, 171–177.

[67] What follows is a confused account of a primitive origin myth. The marrying of brother and sister is very common in these stories. Cf. Blair and Robertson, ut supra, 5, 121–127 (Loarca, Relation, ca. 1580), in which the brother and sister consult the tunnies of the sea, the doves of the air, and the earthquake, successively, in order to calm the qualms of the woman.

[68] Gabe, or taro, *Colocasia esculentum* (L.) Schott, a plant (both root and leaves) used extensively in the mountain districts. See Census of the Philippine Islands (1905), 4, 121; see also Merrill, E. D., A flora of Manila. Manila (1912), 134.

said to the brothers of his youngest grandson that they must take their youngest brother to Loma-oan to find him a wife; so they went to Loma-oan and stayed there until their brother was married. Then they returned home bringing with them Langaya, the wife of their younger brother. Up to this time the people in the place now called Besao had increased to 18 persons, or 9 families. These were the forefathers of the people now living in Besao, with the exception of a few that came later from other towns.

When the population of the place now called Besao reached the number of 300, including men, women, and children, they considered themselves strong enough to go down to the coast to buy salt, without being molested. So Maxsil headed a crowd of 50 persons and started for the coast; when they came to the sitio of Locbuban in the confines of Santa Lucia, Ilocos Sur, they met a man and his son. When the man saw the Igorots with their spears and shields he ran away, leaving his son there, a boy about 9 years old; the Igorots captured the boy; some of them wanted to cut his head off, but Maxsil said, "Let him live, because I want him for my son (Maxsil being sterile), for this is the place where Abay, the sister of our grandfather, made her home and married, and who knows that this boy is not related to us." They discontinued their journey to the coast and returned home taking the boy, that had been captured, with them; the boy said that his father's name was Aquino and that his name was Quiño. Maxsil brought Quiño up in the place now called Besao; the boy Quiño acquired the customs of the Igorots and became a very industrious man. Maxsil married Quiño to one of his nieces by the name of Dalinsa, and they raised a family of 7 children, 3 boys and 4 girls. By this time Quiño became homesick; he thought of his father and mother, and he asked the old men of the community if they would not allow him to go down to the coast to visit his parents. They agreed, and some of the old men accompanied him; they took with them 70 men, armed with spears and shields in order that they might protect themselves against the people that might want to attack them. When they arrived near the town of Santa Lucia they halted and Quiño took with him 8 men as guards to go with him to his father's house. When they arrived at his father's house the door was closed, as it was night already. Quiño called out, and his father asked, "Who is there?" Quiño answered, "I am Quiño, your son!" His father and mother became very angry when they heard this reply, as they thought it certain that their son, Quiño, had been captured by tattooed Igorots. The old woman got a torch and the old man armed himself with a club, as he wanted to punish the man outside who claimed to be his son. As soon as they opened the door, they recognized their son; they were convinced that he was the son they had lost years ago, though he was naked and had long hair like a woman, as was the fashion of the Igorots in those days. The old man cried out, "Here is my son that was taken away by *Busos*,"[69]

[69] See Worcester [*This Journal* (1906), 1, 845 and 850], who says that the Igorots of the northeastern mountains of Benguet, the Kayapa district, are called *Busaos*. This word means enemies, and is not a tribal designation. Scheerer [*Pub. P. I. Ethnol. Surv.* (1905), 2, pt. 2, 99] says, "The term *busol* is not so much a tribal name as a hateful designation of the head-hunting, cattle-thieving, and kidnaping Igorot living around and south of the mountain Data in what is sometimes called the *Kabusolan* or territory of the Búsol." See also, Perez, Igorrotes.

and he has returned to me!" When their neighbors heard this they all gathered around the place and all were very glad. When all the relatives had gathered together, Quiño gave them a complete narrative of his life among the Igorots and he also told them that he was married to an Igorot woman. His relatives were very glad to see Quiño again, and they extended to him and his companions a kind welcome and hospitality. While they were in Santa Lucia, an order from the civil governor of the province of Ilocos Sur was received there, stating that every town must send to Vigan, the capital of said province and the official residence of the civil governor, their representative, to receive the cane of office as capitan of their town. Quiño's parents and relatives advised him and his companions to go with them to Vigan; they consented to go, and when they arrived at Vigan they presented themselves to the civil governor there and requested that their rancheria might be organized into some kind of a government and that one of their men might be given authority to look after the community, in order that the name of Buso, by which name the people on the coast call the Igorots, might be changed. The civil governor appointed Quiño as maestre de campo, and gave him the cane of authority, a cane mounted with a rooster-shaped gold knob. The rancheria was then formed into a town and was named Besao. Formerly the people called this country the Buso's territory; the word Besao was derived from the word Buso. After Quiño had received the cane of command, they all started for home, by way of Candon. When they arrived at Candon they inquired for the relatives of Abay; they found them, and it resulted that Quiño was descended from Abay and, therefore, was related to the Igorots that captured and cared for him. As a token of relationship, the relations and descendants of Abay granted to the Besao people half of the plain that lies between Santa Lucia and Candon, for them to make their homes there in case they wanted to remain there. (A long time ago, it was said that the plain east of Candon belonged to the Besao people.) When the necessary papers were made out for the granting of this plain to them, they returned to their town, Besao. At that time the civil governor had imposed on the people of Besao a yearly tax; to wit, 2 pounds of beeswax and a jar for the whole town. Any time that they took their taxes to Vigan they always returned by way of Candon; there they stopped and collected salt and cotton in payment for the rent of the land granted them by the descendants and relatives of Abay, who were occupying it at the time. After many years had passed, during which time the Besao people had always collected the rent for this land, the people of Candon send word to our old men to come to Candon and bring with them the papers regarding the land in order that they might renew it. Sablay and Mangudang took the papers down to Candon and, upon their arrival there, Sr. Alberto Guirnalda and Alférez Leon's father took the papers from them; they made out new papers and copies of them were given them. They returned home without having anyone look at them to see whether they were right or not; when they returned to Besao they carefully put them away; after a good many years they showed those papers to a sergeant of infantry, stationed at Sagada, a close-by town; great was their surprise when they heard the contents of the paper read to them, as follows: "The Besao people are not in any way to be restrained to pass back and forth to Candon and they are free to make their homes in any place they wish." This was entirely different from what they had imagined.

At the nomination of another maestre de campo, to relieve the outgoing one whose term had expired, the old men went again to Vigan by way of Candon. They stopped there for a while to talk over the matter of the land, but the people of Candon denied everything, and when our people asked them to return to them the old papers about the land they informed them that they were burned up. That ended the collection of rentals for this land, and from that time on they had to pay for all the salt and cotton that they got from there. They proceeded on their journey to Vigan, and when they arrived there they called on the civil governor and requested him that he change the title of their official from maestre de campo to that of gobernadorcillo. The civil governor granted them their request, and Mangudang was appointed with that title and became the first gobernadorcillo of Besao, and after Mangudang had received the cane of office they all returned to their homes. About that time Sr. Antonio,[70] a Spaniard, arrived at Cayan as comandante politico militar for the province of Lepanto; not very long after that a man from Vila, a barrio of the rancheria of Bauco, made a trip to Besao, and upon his return he stole a carabao, but the people saw him and pursued him; they overtook him at a place called Anaman in the confines of Besao, and there they killed him. When the Vila people heard that one of their men had been killed by the Besao people, they made a complaint to Sr. Antonio, the comandante politico militar. Sr. Antonio sent a force of soldiers against Besao, headed by a captain of infantry. The people of Besao heard of this expedition and the old men gathered together and with the gobernadorcillo went to meet them. They displayed a white flag (a piece of white cloth); they took with them also a drum, and the gobernadorcillo carried his cane; when the captain of infantry saw all these things, he knew that the people of Besao were not *alzados* (outlaws). However, he arrested all the old men, together with the gobernadorcillo, and took them to Cayan, the official station of the comandante politico militar. Upon their arrival there, a great many people from different towns had gathered there, to witness the executions, for they believed that the Besao people were going to be shot. The Besao people were taken to the upper story of the comandancia, to the office of the comandante politico militar, and after he had heard their declarations he decided that they were peaceful people and gave them G strings, made of *condiman*,[71] also some handkerchiefs; but, in the place of Mangudang, he appointed Gaoli gobernadorcillo for the three towns of Besao, Payeo, and Banguitan, and gave him the official cane; he also appointed other subordinate officials; such as teniente mayor and cabezas de barangay. The people from the other towns, who had come there to witness the executions, were greatly surprised to see that instead of these people being executed they had been given clothes and had been honored with official positions besides.

[70] Probably Antonio Perea, the first comandante politico militar of Lepanto, who held office during the years 1852–56. See Perez, Igorrotes, 47 and *Pub. P. I. Ethnol. Surv.* (1904), 3, 362.

[71] Condiman (Ilocano for red) is a red cloth used extensively by the Ilocano women for making the small upper covering worn by them, as well as for tablecloths, towels, and various other purposes, such as the decoration of buildings on certain holidays. It is also traded by the enterprising Ilocanos with the mountain peoples.

A list of the officials of Besao, covering the period of eighty-eight years follows. The account bears the name of the presidente and secretary and the names and marks of the old men consulted.

ORIGIN AND LIFE OF THE FIRST MAN AND WOMAN THAT SETTLED IN THE BARRIO OF PAYEO, BESAO, LEPANTO, MOUNTAIN PROVINCE

Angpeo and Dam-may, his wife, both of the rancheria of Tubo, Abra, came to make their home in Banay, where they lived all alone. A girl was born to them, and they named her Siding. They lived on nothing but wild gabe, bananas, and *camote-moro*,[72] as they had no rice nor anything else. When Siding grew up to be a woman, a young man from the rancheria of Deydey, subprovince of Bontoc, came to their place and married her. After being married many years, 3 children were born to them, 2 boys and a girl; they named the boys Baccangen and Daguillo and the girl, Biana. When these children became men and women, a young man from Tubo, whose name was Bulalacao, and who was somewhat related to Angpeo, the original settler, came there, and after staying there for some time with them married Biana. He told his father-in-law that he would go and bring his sisters over from Tubo and they could marry his two sons; he went after them, and when they arrived (their names were Un-nanay and Licona) Baccangen married Un-nanay and Daguillo married Licona. Bulalacao had 7 children with Biana, 4 boys and 3 girls; 6 children were born to Baccangen and Un-nanay, 3 boys and 3 girls; 7 children were born to Daguillo and Licona, 3 boys and 4 girls. The children of Bulalacao, Baccangen, and Daguillo, when they became old enough to marry, married among themselves. By that time they had increased to 30 persons; then people from other places began to arrive and settle among them. Among the new settlers there was a woman named Caducali; nobody knew where she came from. She brought with her a stalk of rice; she gave this stalk of rice to Cote, the headman of this little community, and said to him, "This is the best food for people, take it and plant it in a seed bed, and when the stalks have grown big enough transplant them into swampy ground." She also said, "You had better move into another place and make the place where you are living into rice land." Therefore, they moved to the uplands and named it Payeo and turned the land from which they moved into *payeos* (rice paddies). From that time on rice was raised to a great extent.[73] The population had also considerably increased, but owing to so many people coming from other towns it is impossible for us to learn the origin of all of them.

THE BEGINNING OF ENMITY BETWEEN IGOROTS AND CHRISTIANS

Langlangquioan, Oaquing, Pasicat, Lobdoy, and Bocasi, of the towns of Besao and Payeo, went down to the coast to find some work in the town of Santa Maria, Ilocos Sur. At the east side of this town they met some hunters from Santa Maria, who were looking for a dog that had strayed

[72] The camote moro a yellow-fleshed, red-skinned, sweet potato, grown more or less commonly throughout the Archipelago.—BARRETT.

[73] The Ifugao myth of the origin of the lowland or irrigated rice is very similar to this.—BEYER.

from them. When they saw the Igorots they thought that the Igorots had stolen their dog, as it was known that Igorots eat dogs; the Christians persuaded the Igorots to follow them, telling the Igorots that one of them had some work for them to do; they went with the Christians, who had them that night to sleep inside of a strong bamboo fence; when they were sound asleep, the Christians killed every one of them, with the exception of Bocasi, who succeeded in escaping. The Christians buried the bodies of their victims in Santa Lucia.[74] Upon Bocasi's return home, he told his townspeople what had happened to them. Thereupon the people of Besao and Payeo planned a head-hunting trip to Santa Maria; they started for that place, and when they reached the outskirts of the town they saw a young man carrying ears of corn on his head. They killed him and cut off his head, arms, and legs and then returned home again, full of joy that they had avenged themselves for the cruelty of the Christians. From that time on, the Besao and Payeo people stopped going to Santa Maria until the time when Quiño went to Vigan and was appointed maestre de campo; then the Igorots and the Santa Maria people made peace, with the friendly help of the people from Santa Lucia.

MURDER OF A YOUNG BOY

Pasingan and one of his sons, a boy about 7 years old, named Bulay-oc, went to Suagayan River, now in the confines of Angaqui, to fish. While fishing, instantly and without notice, they found themselves surrounded by Busos from Cagubatan.[75] Pasingan's intentions were to make a stand against the Busos and defend his son, but he saw that it was useless, because he was greatly outnumbered, and that if he did not run away he also would be beheaded. The Busos cut off the boy's head, arms, and legs, and left the body there; when the Busos had gone, Pasingan returned and took the body of his son to Payeo. After three months, the whole town of Payeo went on a head-hunting expedition to Cagubatan; on their way they encountered the Cagubatan Busos, who were also on a head-hunting expedition; fighting began between the two parties, which resulted in a defeat for the Payeo people, 2 of their men being killed, Matel-lo and Yotayot, and their heads, arms, and legs being cut off. When the Cagubatan Busos had gone, the Payeo people went back to the place for the bodies of their companions, which they took back with them to their town, after which they had a mourning cañao that lasted about three months. After the termination of this cañao, they selected some of their men to go to Cagubatan to recover, through purchase or exchange of gold, putic (jars), and brass gongs, the heads, arms, and legs of the men that had been killed. They started out, and upon reaching Sumadel they found a leg of one of their people; they held a little

[74] For relations between the Igorots and other Philippine peoples, see Blair and Robertson, ut supra: 20, 258, 275, 276; 21, 149; 23, 280; 43, 77; and 48, 82, 83. For their relations with Spaniards, see 14, 281–326; 17, 306; 19, 161, 255; 20, 262–303, 306; 28, 158, 167, 238; 31, 261, 262; 37, 245–249; 38, 228; 43, 76, 77; 48, 56, 57, 68, 70, 73, 81–90, 128, 131; 50, 170; 51, 49, 56; and 52, 215.

[75] See Beyer, *This Journal, Sec. D* (1913), 8, 94, and Lillo de Gracia, Distrito de Lepanto, 21, for interesting accounts of the customs and beliefs of this place.

cañao over it and then proceeded on their way. At Masla they found another leg, also one at Lobong; they found out that the people of Tadian and Cayan were in possession of the arms. When the Payeo people saw that all the neighboring towns were their enemies, they turned toward home, and when they went through Sumadel they redeemed the leg they found there with a putic worth about 100 pesos; then they went home. They told the people about the arms and legs and where they were; the old men then decided to send other men after the heads of their people that were killed. Banaoi and Dagdagnen were chosen for this errand; they took with them brass gongs, jars, and gold. When they reached Cagubatan they informed the people there that they had come to exchange gold, putic, and brass gongs for the heads taken by them from their people; the Cagubatan people killed them and then took their gold, jars, and brass gongs. The Payeo people waited many days for the return of Banaoi and Dagdagnen, and when they did not return they sent some of their men to look for them. When these men arrived at Sumadel, they commenced to kill the people there; when they had taken four heads they returned to their town, highly satisfied at being avenged; upon their arrival in their town they held a cañao that lasted about four months. Shortly after this, the Sumadel people also started on a head-hunting expedition against the people of Payeo and Besao, but when they were halfway between Sumadel and Besao, a man that was gathering firewood saw them and ran to inform the Payeo and Besao people; immediately these two towns started out to meet the Sumadel expedition, which prevented the Sumadel people from getting into their towns. At the mountain Batay the two parties met and had a fight; the Sumadel people were defeated, and one of their warriors was beheaded by the Payeo and Besao people. When the people of Sumadel and Masla realized that they had no show against these two towns, Payeo and Besao, Quabang and his wife Ecyey decided to go to Vigan[76] to make a complaint to Sr. Galbey,[77] the commandant of infantry. Upon arriving there they presented themselves to the commandant of infantry and said to him, "We, husband and wife, have come to ask your protection against the people of Payeo and Besao who are exterminating us, and if you will go and punish them we will give you a piece of gold, in the shape and about the size of a dog." The comandante of infantry went to Payeo with 30 soldiers; upon arriving at a place called Sacaan, a sitio close to Payeo, the old men of Payeo went out to meet them with a white flag, made out of the bark of a tree, and took with them also things to eat, among them some chickens. The comandante made friends with them, and went to Pandangaan and remained there five days in order to observe the people, and when he was satisfied that the Payeo and Besao people were not bad people he told Quaban and his wife that their complaint was false and that they must go and get the gold, the size of a dog, that they had promised to give him. When they brought the gold, the comandante was greatly surprised, because it was not as big as the size of a dog, but it was only as big as a

[76] The capital of Ilocos Sur Province.

[77] Possibly the Col. Guillermo Galvey mentioned by Santos, Informe sobre las minas de cobre de las rancherias de Mancayan, Suyuk, Bumucun y Agbao. Manila (1862), 18.

finger in the shape of a dog; the comandante insisted that he wanted the gold they had promised him and that they must find enough to enable them to make it the size of a puppy. They got together all the gold that the people of Masla and Sumadel had, and made it in the shape that the Spaniard told them, but still they had not enough gold. Then Quabang asked the Payeo people, as a favor to him, to give him some gold and thereby their towns would make friends and forgive the wrongs that they had done them. The Payeo people gave Quabang two pairs of earrings, but still there was not enough; then Quabang gave to the Spaniard his unmarried sister, by the name of Dayeman, whom the Spaniard took away with him, and who has never returned to her home. Before the Spaniard went away, he appointed Paguien maestre de campo for Payeo and ordered him to Vigan to receive his instructions from the authorities there. About a year after they decided to go to Vigan, but they thought that Buluan should go to Vigan and take the place of Paguien as maestre de campo, because Paguien was a small man and thin and it would be a disgrace to them, while Buluang was a big man—fat and big headed—and his eyes were like the eyes of a carabao. They did so, and when they arrived at Vigan Buluan appeared there as maestre de campo. The authorities then told them that if possible they should quit their head-hunting. From that time on, Buluan was known as maestre de campo. Upon their arrival home, Buluan made a trip to the neighboring towns and invited them to make peace with each other; peace was established with all the towns that he visited. Later on he made another trip to Tanobong, taking with him Olbanes, Macon, Cangoy, Pacodan, and Logsing, with the intention of visiting the towns in the eastern country, but on their way they were met by Busos from Mainit who killed Buluan, the maestre de campo, Olbanes, Macon, and Cangoy. Pacdogan and Logsing made their escape and ran back to Payeo for help; all the men of the community started at once in pursuit. When they arrived at the place the Mainit Busos had gone, but they found the bodies of their companions and took them back to Payeo. About a half a year after, a comandante politico militar arrived at Cayan, and the Payeo people complained to him of the murder of Buluan and his companions; the comandante sent soldiers to Mainit, but the soldiers found nobody there, so they burned up all the houses that were in Mainit.

The town of Payeo was reduced to a barrio the same time as Besao; it was part of the town of Besao, originally. Many years after it was reduced to a barrio we succeeded in having it organized into a town again and were then separated from Besao again; a gobernadorcillo and other subordinate officials were appointed for Payeo. We were a separate town for more than four years, when we were again annexed to Besao; after many years we were again separated from Besao and formed into a separate town. When the American Government established the provincial government in Lepanto, we were again annexed to Besao as a barrio.

BARRIO OF PADANGAAN

The original families of the barrio of Padangaan and their lives, as told us by our forefathers, are as follows:

Quindaguen and his wife Palonet from Payeo were the original people that settled at Padangaan; they had planted a piece of land there with

camotes and other vegetables, so they went and made their home there; while there they had 5 children, 3 boys and 2 girls. Smallpox then broke out at Payeo; the people there were very much frightened over it, because that was the first time that that disease ever appeared among them; consequently a good many of the Payeo people moved to Padangaan; in this manner Padangaan became inhabited and so Padangaan is the offspring of Payeo.

In 1902, Padangaan became a barrio of Besao. A short list of its officials since that time and the names and marks of the old men consulted follow.

BARRIO OF AGAUA

The original families of the barrio of Agaua, as it has been told to us from generation to generation are as follows:

Bodoos, Seppa his wife, and his two daughters, from the rancheria of Fidelizan, of the town of Sagada, had a she hog who went to have her pigs at a place called Agaua. That was before anyone lived at that place. Bodoos went after her but he did not succeed in getting her home, so he built himself a little hut there in which he lived while taking care of the hogs. While there, he noticed that the place was good for planting, as it was swampy; therefore, he decided to make their home there; he brought his family over and they were the first settlers in Agaua. When Bodoos's daughters, who were named Bal-i and Canopa, had grown up, they married two young men, one from Fidelizan, named Pag-ha, and the other one from Tubo, Abra, named Tobtaben. Pag-ha married Bal-i and had 2 sons by her, who were named Basicon and Pilingen; Tobtaben married Canopa and had 3 children by her, 2 boys, Olao and Atioag, and 1 girl named Dal-ling. When the sons of Pag-ha and Tobtaben grew up to be men, they went to Fidelizan to get married; Fidelizan is not very far from Agaua, only a mountain separating the two; after they had all got married, they returned to Agaua with their wives; in this manner the population of Agaua increased also by many people coming from other places.

Lists of the officials of the barrio follow. The barrio was at first annexed to Sagada, and in 1908 it became a part of Besao.

VARIOUS EVENTS

During Domeguias's time as gobernadorcillo, the towns of Mainit, Guinaang, and Dalican made a combined head-hunting trip to the town of Agaua, without any cause whatever that the people of Agaua were aware of. They killed 11 people, and the rest of the Agaua people, not being able to hold their own, ran away; then the head-hunters plundered the town and took everything away with them, as palay, putic (jars), brass gongs, hogs, and everything that they could find, after which they set fire to the town and not a house or granary was left standing. The people escaped in all directions, some went to Besao, some to Payeo, others went down to the coast and to other places. Five months after this incident, Domeguias, the gobernadorcillo, called all the people back to Agaua; some returned and others remained where they had made their homes by that time. When they had rebuilt their town again, they thought that they

would take the matter up with the authorities. So Domeguias, the gobernadorcillo, and others went to Vigan to see the civil governor. After Domeguias made his complaint to the governor, the governor sent for the comandante politico militar of Bontoc, in whose jurisdiction Agaua was at that time, and transferred the complaint to him. The comandante politico militar and Domeguias then returned to the mountains; on their way the comandante horsewhipped Domeguias and would have killed him had he not succeeded in making his escape. The comandante whipped Domeguias because he did not make his complaint direct to him; he was angry and ashamed for being called to Vigan. After Domegiuas ran away, nothing more was done about the complaint.

About that time the population of Agaua had increased considerably again and Agoyoc was appointed gobernadorcillo. Shortly after Agoyoc was appointed, the Guinaang Busos made another head-hunting expedition to Agaua in which they killed 9 people. The people of Agaua then made a complaint direct to the comandante politico militar of Bontoc, and he had the town of Guinaang set on fire and burned up.

During the time of Malaggay as gobernadorcillo, the town of Sacasacan sent a head-hunting expedition against Agaua and killed Pagdang while he was getting firewood in the nearby mountains. And while Somilep was gobernadorcillo, the Guinaang people killed a man by the name of Diaoyao, of Agaua, while he was hunting in the mountains above the town.

While Docal-las was gobernadorcillo of Agaua, the Dalican people killed Anamong while he was working in his rice fields and then entered the town and killed 2 more people.

During Masidong's time as gobernadorcillo, the Mainit people killed Banganay and Duquey while they were planting camotes.

When Baygo was gobernadorcillo, the Sadanga people killed Bandideo and Paquio while they were cutting rice at Libo.

While Odlas was concejal of Agaua, the Tococan people killed Pampamayan at Bontoc, where he was studying in the industrial school.

All the above-mentioned events have taken place just as they are related and we witness it with our signature. [The signatures and marks follow.]

BARRIO OF BANGUITAN

We, the old men of Banguitan, herein relate the origin of the first people that settled in Banguitan, as accurately as it has been handed down to us by our forefathers.

Gayaman and his wife Pingan, together with 5 more families from Dalican, Cayos, in the confines of Cervantes, went to make their homes in a place called Cablad, in the confines of Besao; they emigrated from their town, Dalican, because they were afraid of other enemies, as many of their townspeople had been killed by Busos. During the first year that they lived at Cablad, they were engaged in herding their swine; one of Gayaman's hogs gave birth in a forest near Cablad. After Gayaman found her there he built a house for himself to live in, while he was taking care of his hogs; later on his wife came to live with him there, and then they decided to remain there and make that their home. This place was known as Banguitan. Their relatives, still living at Cablad, finally came to make their home at Banguitan also. In this manner the barrio of Cablad became abandoned and Banguitan became settled and the people are living there to

this day. The above-mentioned people are our forefathers, the original families of this barrio. We are, however, unable to find out the origin of each of us living here; neither do we know in what year our town was made into a barrio; we only know that when a gobernadorcillo was appointed for Besao, we were annexed to it and a cabeza de barangay, who is considered as the father of the barrio, was appointed.

Lists of officials of various periods follow. At one time the barrio was annexed to the municipality of Bagnen, but in 1908 it became a part of Besao.

COMMON CUSTOMS AS THEY ARE OBSERVED ALL THROUGH THIS TOWNSHIP

Birth of a child.—The husband of a woman that is pregnant and about to give birth cannot do the following things: (a) Plant bananas; (b) erect a post of a house; (c) cut down a tree. When the child is born, the father must not do the following: (a) Build walls; (b) cut down trees; (c) lead carabaos, cattle, or horses; (d) wade a river in going to another town before three months have past; (e) climb a tree or to the top of a house until the child has teeth.[73]

Marriage customs.—The parents of the young man and woman, after they know that their son and daughter wish to marry, call all their relatives together and kill a suckling pig. When they are about ready to eat, the father of the girl goes to the young man's house and takes him to the house of the girl. On their way back, they watch very closely for rats, alligators, or snakes; they also look carefully for a hawk or a crow flying over them. If they see any of these animals, the wedding is postponed for that day. If they see any of these animals for the second and third time, the young man and girl are not allowed to marry each other. During the first year of their wedded life, the husband cannot go to another town, especially if he has to cross a river.

Wedding.—After a man and woman have been married a year, a big wedding feast is prepared, for which they kill carabaos, cattle, horses, hogs, dogs, and chickens, according to the property. For two days after this feast the married couple must not eat anything. The young girls of the town stay with the wife and watch her for seven days and nights, in order that she may not sleep with her husband. For three years she must not go into another town; also she is not allowed to do the following things: (a) Eat in another house for five months after the wedding; (b) work on walls; (c) chop on a live tree; and upon going to another town for the first time she must kill a chicken upon her return.

Customs at the death of a person.—When a person becomes seriously ill, the parents or relatives kill 2 hogs and have a cañao. The moment that the sick person dies, they kill 2 hogs again. Two hours after the death another hog is killed. They recline the body against the ladder of the house and wail and cry over the dead. After their lamentations are over, they kill a chicken, and when they are about to bury the dead another chicken is killed. After the burial a she hog is killed; two days after the burial another chicken is killed; and a month after the death another hog will be killed; after four months, 2 hogs and 3 chickens are killed; three months

[73] See Jenks [*Pub. P. I. Ethnol. Surv.* (1905), 1, 59–62] for a discussion of childbirth and care of children among the Bontocs.

after this cañao, 1 hog and 2 chickens are killed again; four months after this, they kill 3 hogs and 2 chickens; they wait four months more and then kill 1 hog and 2 chickens more. After all these ceremonies are over the parents and relatives can depart, but if they should live in another town and there is a river to cross they cannot cross for a year.[79]

Customs in the building of a house.—When a man has started to chop timbers to build a house for himself, he cannot go to another place or town until the house is completed. When he builds his house, even though it is raised already, and he digs up a toad, rat, snake, or other animal, the house is moved to another place. Also, should it rain or should a rainbow appear in the sky, while the house is under construction, or a crow or a hawk fly over it, the house is moved to a different place.

The foregoing is a description of our customs that we have inherited from our forefathers.

CAYAN [80]

The barrios of the township of Cayan are Cayan, Tadian, Balaoa, Lubon, Masla, Sumadel, and Tue. "In 1844, owing to the great many dangers that threatened this town, arising from the hostilities of neighboring towns, from the stealing of their cattle, hogs, chickens, etc., and from being compelled to pay tribute to other towns, the people decided to go to Bucay, the former capital of Abra, and request the authorities there that a Spanish official be sent to their town." Thereupon Spanish-appointed officials were established in Cayan, which became the

[79] Of mortuary customs among the Igorots, Quirante [Blair and Robertson, ut supra, 20, 274, 275 (1624)] says: "When one of those barbarians dies, they do not bury him for many days, for, as they say, they pass one month, during which period they amass quantities of food about the deceased, to whom they give his share as well as the others. Then they continue to prick the body, and, as they say, they draw off or suck out the humors until the body is left dry. When that time comes they wrap it in their blankets, and fasten *buyos* (betel) and other things about the waist for the journey. Some are buried in a sitting posture and placed with their backs against their shields, in caves under the rocks, the mouths of which are stopped with stones. Others they set in the trees, and they carry food for so many days after having left them in either one of those places." Compare other mortuary customs of Philippine peoples in Blair and Robertson, ut supra: 5, 129–141 (Loarca, Relation, ca., 1580); 7, 194–196 (Plasencia, Customs of the Tagalogs, 1589); 16, 133 (Morga, Sucesos, 1609); 40, 79–82 (Colin, Labor evangelica, 1663); 40, 165, 166 (Combés, Historia, 1667); 40, 337–339 (San Antonio, Chronicas, 1738–44). Compare also the ceremony among the Ifugaos described by Beyer and Barton, *This Journal, Sec. D* (1911), 6, 227–249; among the Bontocs in Jenks, *Pub. P. I. Ethnol. Surv.* (1905), 1, 74–80. See also Worcester, *This Journal* (1906), 1, 850; Perez, *Pub. P. I. Ethnol. Surv.* (1904), 1, 201; and the manuscript Memoria aprocsimada, op. cit.

[80] For a description and partial history of Cayan, see Perez, Igorrotes, 153–162. It is located 9 kilometers from Cervantes.

capital of Lepanto. In 1883, Luis Sarela [81] became the chief official. "He took great interest in the people and in their future welfare; he ordered the planting of potatoes, cabbages, beans, cacao, coffee, mangos, and other fruits." The people, however, paid little attention to the order, and a penalty of imprisonment or whipping was imposed for neglect. In 1883, the capital was transferred to Cervantes, as Cayan lacked good building sites. The first friar missionary entered Cayan in 1881, and the first teacher was appointed in 1885. Lists of the officials of the various barrios are given. The following customs are described:

CUSTOMS OF THE PEOPLE

The cañao that is celebrated by the whole town is called begnas [82] which is celebrated twice a year, before the rice planting and the rice cutting time; this is the biggest cañao that is held by the whole town; it lasts from two to three days, during which the people dance, play ganzas, and sing. This cañao is held to ascertain whether the rice crop will be a good one or not; they tell it by the gall of the hogs that are killed for this cañao; if the galls are big and full it is a sign that there will be a good crop, but if they are small and empty it is a sign that the crop will be small; [83] during the time that the hogs are killed no one from the town is allowed to go out anywhere, nor is anyone from another town permitted to come into the town.

The cañaos that were handed down to us from one generation to another by our forefathers are called bayas, baquid, *obaya*, and palis.[84]

Bayas is a cañao in which 4 to 6 hogs are killed, also carabaos, cattle, and horses; that is, if the people are rich. They sing, play on their ganzas, and dance. The persons that celebrate this cañao cannot leave their houses for nine days and they cannot go to another town for three months. (This cañao is held by married people, and is celebrated only three times by the same persons.)[85]

Baquid is somewhat like the bayas cañao, but in this cañao ganzas are not played, nor do they sing or dance; it is only held once a year. (This cañao is held for the dead.)

Obaya is a cañao in which a hog is killed; no ganzas are played in this cañao; the old men come together and eat; after a while they all go back home again. (This cañao is for the purpose of finding out anything that happened in the town, such as the discovery of a thief, etc.)[86]

[81] Luis Sarela y Figueroa became comandante politico militar of Lepanto in February, 1879, and governed the district until August, 1883. Besides moving the capital, he encouraged education and built a trail from Cervantes to the boundary of the district. See Perez, Igorrotes, 58, 59.

[82] See footnote 16.

[83] See footnote 31.

[84] Compare this account with that on page 489.

[85] See footnote 44. The ceremony here described is similar to the Ifugao *bumaiyah*.—BEYER.

[86] This ceremony is the same as the Ifugao *ubaya*.—BEYER.

Palis is a cañao in which a hog is killed at night time; they beat the drums and sing; this cañao is held for the sick, in order that the people afflicted with enlarged intestines, the poor, and pale and weak people may be cured; the next morning they kill another hog which they call *sabusab* (meaning the end of the cañao). These are the only cures for sickness that the people believe in.

SICKNESS

When a person gets seriously sick, the parents or relatives send for an old woman, who is called *baylan* (priestess). This woman prays to the anito and then speaks to the sick person, in a trembling voice, saying, "We have caused you to be sick because you have failed to offer up to us our customary sacrifice (a hog or a chicken); we have made you sick, so that from now on you may not forget again; we may not only make you sick, but we may kill you also." The patient then answers and says, "Yes I will sacrifice to thee all thou asketh; though I have it not, I will find it, but I pray thee, restore my health to me again." In the meantime the parents or relatives prepare a coconut shell of tapuy over which they pray and say, "If it be true, that thou, the anito, hast made him sick, we pray thee to restore him again to health so that he will be able to make the sacrifices that thou hast asked of him." If the anito, so prayed to, is the one that made the person sick, the patient will get well as soon as the sacrifice is offered; if the patient does not get well, another old women is called, who goes through the same ceremonies as the other one; this is kept up until some old woman baylan finds the anito who made the person sick.[87]

SETTLING QUESTIONS AND COMPLAINTS

Old men only, who have reached a certain age, are allowed to take part in the settling of disputes and complaints of their townspeople. As soon as a complaint is made, the old men are called together to investigate the complaint. A dog and 2 chickens, of the same size and color, are prepared. The 2 chickens represent the 2 litigants; the chickens are killed by beating them with small sticks; then they are held over the fire and partly roasted, with the feathers on;[88] after that they cut them up and take out the gall. If the galls of the chickens are of equal size, they counsel the litigants to make a friendly settlement, which will settle their dispute forever. The dog and the chickens are then cooked and eaten. The litigants pay for them as well as for other things that are used up during the settlement of their question. Should the galls be of different size, the one whose chicken has the larger gall loses the case. The old men then will inform the one whose chicken had the larger gall that the case has been decided against him; then he will be obliged to make good whatever there is stated in the complaint. For instance, if he had stolen a horse, he would have to return the horse or make good in some other

[87] Cf. Blair and Robertson, ut supra; 5, 129 (Loarca, Relation, ca. 1580); 40, 336, 337 (San Antonio, Chronicas, 1738–44); 43, 108, 109 (Ortiz, Práctica del ministerio, ca. 1742); 43, 310–319 (Present beliefs in Luzon, 1905).

[88] The object of holding the chicken over the fire is to burn the feathers off—*ilágim.*—BEYER.

way, with money or another horse, and the same way with cattle, carabaos, or hogs. The old men who take part in the settlement of a case are responsible and have to answer for everything, should the same case ever come up again. Questions can only be settled in the aforestated manner, when the litigants are not in any way alike in age, stature, or in any other manner; but if they are of about the same age, height, etc., the old men put a sharp piece of iron on each litigant's head inserted to the depth of 2 or 3 millimeters, and he that bleeds less wins the case. Should the party who lost the case not be satisfied with the old men's decision, he has the right to call in the old men from a neighboring town; when they arrive, the old men that decided the case will also be called together. The old men from the neighboring town speak first; they state their arguments and ask that the question be reopened and the decision given be revoked and given according to the petition of the man against whom the case was decided. The old men that decided the case in the first place say: "Our decision stands good, because we decided it by the gall of sacrificed chickens that showed that he is the guilty man, but if you insist that the decision be revoked first restore to life the dog and the chickens from which the galls were taken, before we can give another decision."

After the old men have questioned both the litigants, they make them take an oath of the most horrible nature; such as, "May your belly swell up, from which you will die if you have declared falsely;" or, "May you become blind, if what you have spoken be false;" "May you be eaten up by a boa, if you did not speak the truth." The old men set fire to a bundle of pine wood, split into small pieces, which they then stick into a shell full of tapuy. At this the litigants answer, "I swear," accompanied with howls and shrieks, signifying that he who lied will be punished by the anito according to the oath that he took.[89]

The expenses, including the cost of dogs and chickens, incurred in the settlement of questions are paid by both the litigants.[90]

CERVANTES [91]

Cervantes is the capital of Lepanto. Seven barrios belong to it; namely, Concepcion, Rosario, and San Juan, inhabited by Ilocanos and other Christians; and Dain, Malaya, Brooke-Dinwiddie, and Pilipil, inhabited by Igorots. In 1908 Cervantes had

[89] Cf. Colin, Labor evangelica, 1663 (Blair and Robertson, ut supra, 40, 78, 79), who gives the following forms of oaths used by the Filipinos at the time of the conquest: "May I die;" "May I be eaten by the crocodile;" "May I turn into a monkey." "When the chiefs of Manila and Tondo swore allegiance to our Catholic sovereigns, in the year one thousand five hundred and seventy-one, they confirmed the peace agreements and the subjection with an oath, asking 'the sun to pierce them through the middle, the crocodiles to eat them, and the women not to show them any favor or wish them well, if they broke their word.' "

[90] See page 518. The expenses may be regarded as the fee paid by the one losing the case.

[91] For description of Cervantes, see Perez, Igorrotes, 115–124. Cervantes is called by some an Ilocano town, because of the numbers of that race living there.

3,787 inhabitants, of whom 1,705 were Christians and the rest Igorots. The account of Cervantes sent to the Philippine Library was written in 1908 by Sabas Gaerlan, a native of Tagudin, who had lived in various parts of Lepanto since 1873. His manuscript shows that he had received a fair education. The account is simply and charmingly written, and all of it deserves publication. Space and the main subject in hand, however, permit only the following excerpt to be made:

OTHER CUSTOMS OF IGOROTS

When an Igorot wants to celebrate a fiesta or perform a cañao once in four or five years, he kills many hogs, carabaos, and cattle, and calls in all the rich men from neighboring towns and all the poor people in his own town. This fiesta is performed so that he may be honored by his visitors and all who know him. When the cañao is begun all the hogs to be used are gathered together and the carabaos and cattle are all tied up to trees. They dance accompanied by ganzas, and make an offering and ask Cabunian[92] (God) to favor the man performing the cañao and to give him good health, and pray to the anito and the souls of their dead ancestors not to destroy his plants and not to kill his animals so that he may use these animals to perform another cañao for them (another cañao for the anito); this is the custom of the people in Malaya. The people of Dain and Pilipil have another name for this cañao bayas,[93] and it is performed with ganzas before they kill the hogs; first they drink tapuy on the day when the visitors arrive, and the next day they kill the hogs, carabaos, and cattle that they have prepared, and after this, one old man makes an offering to Lomaoig (God)[94] to give good health, good thoughts, and customs to the rich man that performed the bayas; and the old man also calls the souls (anito) of their dead ancestors to help them in praying

[92] See footnote 40.

[93] See footnote 44.

[94] See Beyer [*This Journal, Sec. D* (1913), 8, 96 and 97] for Bontoc stories of Lumáwig. I am indebted also to the same authority for the following: "Lumáwig is a famous Igorot, Bontoc, and Ifugao culture hero. He is only one of many ancestral deities. Jenks [*Pub. P. I. Ethnol. Surv.* (1905), 1, 174, 200–204, 216, 217] is in error in speaking of Lumáwig as a supreme being." Lillo de Gracia, Distrito de Lepanto, recites a story of Lumáwig. His wife is Bañgan, and the two children, Ubban, the boy, and Bugan, the girl, or Cabigat and Suyan. A sample of the manner in which the missionaries were able to turn the old stories to account is related by Perez, Igorrotes, 142, note: "Father Rufino Redondo says, 'Making use of their beliefs (since they worship four gods called Lumauig, Bugan, Cabigat, and Bañgan), I informed them that we also worship God (one and triune), and that Bugan, the wife of Lumauig, is no other than the most holy Virgin Mary, spouse of the Holy Spirit, and Mother of the Eternal Word. I ended my talk by exhorting them to obedience and submission to the Spanish crown.'" [The apparent inconsistency in the names mentioned in the above quotations is probably due to the fact that the authors cited obtained their information from different persons or in different clan districts.—BEYER.]

to Lomaoig that he may give a better living or whatever they have asked and that they may have sufficient of everything when they have their bayas (cañao).

It is a custom of the people in the same barrios to have a cañao which they call pacde or begnas, either before or after working or harvesting; this is for all people, and it is performed in the abong (tribunal). The ceremony that they perform is the killing of a hog, but if the gall of the hog they killed is not good they kill another and continue to do so until they meet a good and full gall. As soon as they see that the gall of the hog they killed is good, they cut the hog into pieces after it is burned and ask Lomaoig or Cabunian (both Gods) to give them a good crop. If it is time for harvesting, or for good luck in the planting, they perform pacde or begnas before they begin their work. No one can go to work the day just after the cañao, and they are [not] allowed to go to the country to work [until] three days after the performance of pacde or begnas if the gall of the first hog they killed is good and full, but if they had to kill [two] or three times they are longer delayed in being allowed to go to the country to work and it will [be] five or six days then before they are allowed to do any work.

If any one of them falls sick, it is their custom to call an old woman to make the cañao, and if she says that 1 hog is needed the parents or relatives of the sick person must kill 1 hog; if the anito says that they must perform bayas, they must do it, and if he says that they must perform tobag they must do it also. The ceremony for tobag is the killing of a hog which they offer to Cabunian in order that the sick person may be cured. If one of them dies, they must kill a hog, and if the gall of the hog is good and full they bury the dead; but, if the gall is not good, they kill another hog and keep on doing so until they find a hog that has a good gall. The dead person is kept in the house for two or more days or until they find a good gall; after the dead person is buried, and before the separation of the visitors in front of the dead house, an old man relates a story and says: "There is Cabunian or Lomaoig looking at the level land where he puts the people who do not know their homes and are cruel. 'I make the earth sink,' he says and 'I again make other mountains.' The world is flooded, and after the water becomes low there are the mountains; two people are left, a man named Gomatan and a woman named Bangan. Gomatan lived in Gangyango Mountain, a part of Malaya, and Bangan lived in Caoitan Mountain, a part of Ifugao, Banaue. When Gomatan saw a fire in Caoitan Mountain he went on a small wooden raft called salibao (drum used by the Igorots), and when they saw each other they were brother and sister. They waited in Caoitan until the water became small, and there they saw the other mountains and rivers. Cabunian saw them there and went and married them, though they did not want to get married; but Cabunian took a *runo* (stem of a large grass) and split it and then he put them close together and said: 'This runo is only one, but can be divided into two and can be joined together again; you, Gomatan and Bangan, get married and become father and mother of many people.' The people increased in number and they did not bury the ones who first died; then Cabunian came down to the earth and told the people that the dead may not become obnoxious and 'After burying the dead you should make prayers and offerings so that you may not be affected by any kind of diseases.'

After they make a prayer or offering, they go to some running water and bathe themselves and after that all the people may go home."[95]

CONCEPCION[96]

The township of Concepcion has 6 barrios, as follows: Alfonzo, Ananaao, Concepcion, Sigay, Mateo, and Tubaline. After giving the lists of officials for these barrios, the manuscript continues:

HISTORY OF THE PEOPLE, THEIR CUSTOMS, AND LIFE

The first condition of a child when he is born and the things he does until the end of his life are the following:

When a child is born, the old men or women perform a cañao which is observed as an offering to God so that the child will have a successful life in the future. The ceremony they observe in this cañao is the killing of a hog or a chicken.[97]

The parents of the child, whether he is a boy or a girl, when he becomes one or two years old, make an agreement with the parents of another child of another family to marry these children, but sometimes this agreement is not carried out.

When this child, boy or girl, is about 10 years old and can do any kind of work, the parents let him go to any place where he can earn a good living or he helps his parents to find food for the family.

As the boy reaches the age of 18 or less, he wants to get married and begins the performances of some cañaos according to the Igorot customs.

When this boy becomes a full-grown man, and old enough to think of the future, he builds himself a house to live in. This married couple diligently work to find enough provisions for their living and they often do the same thing as their parents did, according to their customs; this married couple, though they were united together or living in the same house, have not the right to get the dowries given by their parents, unless the wedding ceremonies are celebrated.

When the husband and the wife want to get the dowries from their parents they tell the old men (principales) of the town that they will celebrate their marriage. The parents of both must agree to it, together with the old men of the town. The day before the marriage they prepare all the things needed for the wedding.

After the preparations are made they summon the people to come to attend the marriage ceremony. On the wedding day there is much happiness, and the husband and the wife as well as the visitors are full of joy. On this day the parents of both bequeath some property, such as lands, animals, house, and other things, to the married couple. In this

[95] One Igorot version of the flood and the new creation. Compare with the similar story in Beyer, *This Journal, Sec. D* (1913), 8, 96. Note that in the Bontoc and Igorot story there is the same reluctance of the brother and sister to be married. Compare also the Ifugao myths related by Beyer, ut supra, 100–102, and 111–113.

[96] Concepcion was formerly a part of the district or comandancia of Bontoc. See Perez, Igorrotes, 245–247.

[97] See footnote 78.

case they make out no receipts showing the property given to the husband and the wife; they only give the document of such property to the married couple.

After the marriage of the husband and wife they must build a house of their own and they themselves secure their own food.

Now if one of them dies and they have a son he will inherit their property; the son himself has the only right to keep all their property.

But if one dies and they have no son to inherit the property, the property that had been awarded cannot be given to the one left until the end of the offering done by their relatives according to custom.[88]

If the married couple had accumulated or earned property besides the awarded property, that property will be divided between the two of them.

There are other habits or customs inherited from our forefathers that we can hardly relate, especially the customs regarding the Igorot cañao.

HISTORY THAT TELLS HOW THE QUARRELS OF THE HUSBAND AND WIFE ARE REGULATED

It is the habit of the married couple, when they have a quarrel and want to be divorced, that the case is told to the old men of the town who assemble at the abong. They talk about it, and the husband and wife are forced to agree and be united together again. During this, the old men in the abong, who are settling this case, compel the married couple to kill a goat or a hog which the old men will eat as their punishment [that is, of the couple] and in payment for the good advice given by the old men. If it is not agreed that the husband and wife be united, the married couple are sent to the tribunal (presidencia) to settle the question.

STORY OF A MAN WHO IS A WRONG DOER, SUCH AS ONE LIVING IN CONCUBINAGE (A MAN WHO LIVES WITHOUT BEING LEGALLY MARRIED), AND THIEVES

If a man is found to be living in concubinage, it is our custom not to complain against him to the tribunal (presidencia), but we gather all the old men, principales, of the township regarding this matter; the old men advise him not to do this same thing again. In this meeting or assembling of the old men a goat or a hog must be furnished, and they eat it according to their customs. But, if he is found doing the same thing again, he will be complained against before the tribunal.[90]

Now, if there is a man found who stole something, he will be counseled just the same as in the case of concubinage and be forced to return to the owner the thing he stole from him; he must suffer the punishment that the old men impose together with what advice they may give him. Such a case will not be reported to the police or to the justice of the peace if it is the first time that the person has stolen something, but if he does it again

[88] Compare the inheritance customs as described in Blair and Robertson, ut supra: 5, 153 (Loarca, Relation, ca. 1580); 7, 181, 182 (Plasencia, Customs of the Tagalogs, 1589); 16, 125, 127 (Morga, Sucesos, 1609); and in Jenks, *Pub. P. I. Ethnol. Surv.* (1905), 1, 164, 165.

[90] Cf. Blair and Robertson, ut supra: 5, 177–179 (Loarca, Relation, ca. 1580); 7, 182, 187 (Plasencia, Customs of the Tagalogs, 1589); 16, 126 (Morga, Sucesos, 1609). See 5, 125, for the Visayan myth of the origin of concubinage.

we will have the right to complain of him to the tribunal or the justice of the peace.

STORY OF THE METHODS OF BUILDING THE HOUSES AND HOW WE WORK ACCORDING TO THE CUSTOMS INHERITED FROM OUR FOREFATHERS

When an Igorot wants to build a house, his neighbors are willing to help him without pay; when the house is finished, the owner of the same will not go to live in it without first performing a cañao and after the cañao he will live in the house.

We can't begin any work unless we kill a chicken, which is used as an offering in order that we may do the work fortunately.

MANCAYAN [100]

From the document for the township of Mancayan, the following excerpts are taken. The township contains three barrios; namely, Aban, Suyoc, and Cabali. The stories of the formation of the three settlements are similar. The customs of all three are identical. For Aban and Suyoc, the narrative of the functions of campo and medes and of the trial by ordeal, called pudong, are given word for word the same. That for Cabali is abbreviated. For all three, short accounts of Spanish and American rule are given, but as they have no special bearing on the main subject they are omitted here. The story of the discovery of copper occurs in the narrative for Aban, and that of gold in the narrative for Suyoc.

ORGANIZATION OF THE PUEBLO OF ABAN (MANCAYAN) IN TIME IMMEMORIAL

The old men of the above town, by name Cacamo, Lasbaquen, Dagacen, Mullones, and Bayed, and the old women, Bangayan and Guiling, state that the persons Tibaldo and his wife Alummay, Magagneo and his wife Cupit, Cumacom and his wife Gueyna, Lagdingan and his wife Budeas, Agaguen and his wife Dapunay, Bilasi and his wife Tampacao, Disamoy and his wife Tabollo, Tiab and his wife Bacluya, and others whose names we do not remember, and who came from very distant rancherias, are the ones who formed the pueblo of Aban in time immemorial. They divided Aban into 4 barrios, according to the centers of population, the names of which are

[100] For a description of Mancayan and Suyoc, see Perez, Igorrotes, 125–140. See also Eveland, Preliminary reconnaissance of the Mancayan-Suyoc mineral region, Lepanto, P. I., *Bull. P. I. Bur. Min.* (1905), No. 4; and Santos, Informe sobre las minas de cobre de las rancherias de Mancayan, Suyuk, Bumucun y Agbao. Manila (1862). The last-named treatise is the first comprehensive geological report on the mining region of Lepanto. See also Hernandez, Reconocimiento de un criadero de cobre en el Monte Aban, termino de Mancayan (1850); von Drasche, Fragmente zu einer Geologie der Insel Luzon. Wien (1878), 36–45; its translation into Spanish, Datos para un estudio geológico de la isla de Luzon. Madrid (1881), 41–50; Memoria . . . de la sociedad Cantabro-Filipina de Mancayan. Binondo (1871).

Balili, Tuboc, Banaba, and Aban. These were the fathers and grandfathers of those who make these statements.

The wealthy old man Tibaldo, who was called campo, was headman of this pueblo, and in each barrio was a wealthy old man of the same barrio who was called mede.[101]

The names of those who have been medes that are remembered are Bangoañgdan, Aguelba, and Quioaen.

Those appointed held those offices [of campo and mede] for an unlimited period, and were only succeeded when the pueblo or barrio so decided, and were relieved by a son or other member of the family.

The medes [each] had in their barrio an ato (kind of court), a small building in which the entire barrio assembled, headed by the mede, in order to discuss the affairs pertaining to the barrio. (Plate II, fig. 1.) The medes communicated these matters to the campo. The latter thereupon assembled all the former in one of the atos, and the matter was discussed in order that he might give his decision. The campo could not decide any matter without the approval of one or two medes, although he believed his decision proper and necessary. There were matters that were decided by the medes, if they formed the majority.

At present this court is involved at times in family disputes and in the case of debts, and is held as follows: Any person appears before the mede and makes a complaint against another person for debt. The mede thereupon sends word to the other medes to assemble in the ato. They summon the defendant, take the declarations of the two litigants, and as soon as the defendant has been declared guilty sentence is given and the sentence communicated to the defendant, with a fine which is imposed of a hog or other animal, and of tapuy, which are consumed by all [the medes] and by those present. Furthermore, he is forced to pay double the debt. If the plaintiff loses the suit between himself and the defendant, he has to give a hog and tapuy, which are consumed by all the people as above said. In cases in which the plaintiff and defendant maintain their positions obstinately because of a strong denial on the part of the latter, the medes oblige them to take the pudong. This is a kind of examination and proof, and is conducted as follows: The medes and old men prepare a small bit of [sharp] steel, and a bamboo through which the steel can pass easily when let fall through the hollow. While the above objects are being prepared, other old men proceed to sacrifice chickens, at the same time praying to their gods to aid them with the litigants, as each one [of the gods] may desire. When everything is ready, the above-mentioned litigants are made to squat on the ground on their heels. As soon as they are in position, he who is about to perform the operation approaches. This is usually an old man, and [there is] another one who acts as witness or assistant. The former places the bamboo on top of the head of one of the above-mentioned litigants and drops the above-said piece of steel through the hollow of the said bamboo. This, through the force of its fall, makes a slight wound in the scalp, from which oozes a small drop of blood. Then he does the same to the other litigant, also in the presence of the other witness or assistant. When the operation is ended, the medes and old men examine very carefully the drops of blood

[101] A note in this account later on defines campo as the headman of the pueblo and mede as the headman of the barrio.

on the heads of the above-said litigants, for the purpose of ascertaining which of the two has the greater amount of blood. That one is thereupon considered to have lost the case, and he is punished as above said.[101]

The presence of the campo is not necessary for all matters, unless he wishes, but it is necessary in the most important matters.

All the affairs of the pueblo and other very important matters could not be written, because we had absolutely no knowledge of paper, pen, and ink in those times, and we preserved all such matters by memory from family to family to our present time.

Short accounts of the Spanish and American régimes follow. Spanish officials were stationed in Mancayan from 1862 until the insurrection against Spanish rule. The manuscript continues:

DISCOVERY OF THE COPPER MINES BY NATIVES[102]

The men, Buansi, Gal-ey, Banggit, and two others whose names we do not now remember, the fathers and grandfathers of the declarants, and hunters in those early times, inhabitants of the old pueblo of Aban (Man-

[101] See footnote 64. Cf. Blair and Robertson, ut supra: 5, 145–147, 161, 181–187 (Loarca, Relation, ca. 1580); 7, 179 (Plasencia, Customs of the Tagalogs, 1589); 16, 128, 129 (Morga, Sucesos, 1609); 16, 321–329 (Plasencia, Customs of the Pampangos in their lawsuits, 1589); 40, 85, 86 (Colin, Labor evangelica, 1663); 40, 150 (Combés, Historia, 1663); 40, 357, 358 (San Antonio, Chronicas, 1738–44); 43, 109 (Ortiz, Practica del ministerio, ca. 1742); 43, 304 (in Mindanao).

[102] The copper deposits of this region have long been known. W. D. Smith of the Bureau of Science [*Journ. Geol.* (1913), 21, 29–61], says that the copper is found in the form of arsenates and sulphides. Eveland [*Pub. P. I. Min. Bur.* (1905), No. 4, 9] presents a good description of the copper fields together with a short bibliographical survey and a history of mining and the mining methods of the Igorots. See also the annual bulletin, *Mineral resources of the Philippine Islands*, published by the Bureau of Science. A Spanish company, called the Cantabro-Filipino Company, began operations in 1856. The company paid about 400 pesos Philippine currency for the concession, and the Igorots were guaranteed employment in the mines at regular fixed rates. It is estimated that 40,250 pounds of copper were produced during the years 1840–55, valued at 117,000 Spanish pesos. The company began the work of actual production in 1860. From that time until 1875, when the company ceased operations, 2,500,000 pounds of copper were produced. The copper mined by the Igorots is smelted by a primitive method probably learned from the Chinese. Eveland says (p. 18): "The copper obtained in this manner they sell partly in cakes to the Christian people in the lowlands, and partly dedicate to the manufacture of pots and boilers which the Igorots forge with stones; also making of the same metal bars, tongs, and small pipes for smoking." *La Guia Oficial*, Manila (1893), 115, says: "In the district of Lepanto are important copper deposits and considerable exploitation has occurred in Mancayan, Suyoc, Bumucun, and Agbao. The Igorots of the most distant mountains carry the mineral down to sell it, but they are hostile to whites, and no one has gone up." Worcester [*This Journal* (1906), 1, 848] says of the copper mining of the Igorots: "Many of the *Igorots* of northern Benguet and southern Le-

cayan), while out hunting one day, in the hopes of being able to catch a deer with their dogs pursued it for some hours. They had the good fortune to catch it in one of the places where to-day is found a hole of the mines of this above-mentioned pueblo. When it came time to prepare their food, the above-mentioned hunters agreed to prepare it in the place abovesaid. For that purpose they gathered some stones on which to do their cooking and on which they set their jar. Thereupon they set fire to the wood, and after several hours one of them went to the said cooking place to see whether the food was ready. He saw that one of the supporting stones had melted like lead. Thereupon all were astonished at the melting of the stone. Upon this they examined the above-mentioned stone and made several experiments with it. As a result they converted it into a substance dark red in color. This the aforesaid discoverers called *gambang* (copper).

After continuing their experiments for some months, the discoverers succeeded in obtaining a certain number of pieces of gambang. They resolved to make jars out of it, which they called *galang*. The rest they converted into lumps and took them to Tagudin (Ilocos Sur) to sell, before and now a part of Mountain Province.

After some years a commission composed of several Spaniards entered the pueblo. Among them were two whose names we remember yet, namely, Señores Don Mariano del Pielago and Don Evaristo, and an Englishman.[104] After another year, those men took possession of the copper mines, and told our ancestors that they had been given the title to those mines by the government. Thereupon, some of our abovesaid ancestors went to other pueblos, and others to other near-by places, and some remained as workmen for those men. In our days, this is our present condition. (Plates IV to IX.)

The organization of the pueblo of Suyoc is related. This is very similar to that of Aban, and the account of the pudong ceremony is word for word the same. The following is related:

DISCOVERY OF GOLD MINES BY THE NATIVES [105]

Daguioa and Al-laoas, the grandfathers of the declarants, one time when they went to the above-mentioned sitio of Palidan located within the

panto mine copper and smelt it by a process of their own. From the metal thus obtained they fashion *ollas* and kettles which frequently are of large size. The method employed in making kettles is kept secret by those familiar with it, and numerous attempts on the part of Americans to surprise coppersmiths at their work have proved abortive. At one time a considerable business was done in the vicinity of Suyok in making rude counterfeits of Spanish copper coins. Clay molds were taken from genuine coins, and into these molds the copper was run. These counterfeits, although quite recognizable as such, circulated freely for some time because of the shortage of small change." American claims were staked out in 1900. See also Santos, Informe, op. cit.

[104] Possibly the forerunners of the Cantabro-Filipino Company, or the company itself. See Eveland, *Bull. P. I. Bur. Min.* (1905), No. 4, 16–19; and Santos, Informe, op. cit.

[105] The Igorot gold mines have long been famous. As early as 1575, Gov-

jurisdiction of the pueblo, for the purpose of bathing, on arriving at the creek, took a bit of *unit* (wet earth that is used as soap for the head) to rub themselves with for the bath. One of them upon rubbing his head with the abovesaid earth saw that his hands had become tinged a saffron

ernor Guido de Lavezares, influenced no doubt by report of gold, planned and despatched an expedition to northern Luzon, but the undertaking had no result. In 1591, the energetic governor, Gomez Perez Dasmariñas, sent his son Luis, afterward acting governor, and two other expeditions to explore the so-called province of Tuy. In 1594, Luis Perez Dasmariñas despatched Captain Toribio de Miranda to the same region. See Blair and Robertson, ut supra, 14, 281–326, for an account of these early expeditions. Pages 301–307 relate "What has been known from old times, in these districts, of the rich mines of the Yglotes [that is, Igorots] both from seeing the great amount of gold that the Indians of those mountains have extracted without skill, and are still obtaining, and which they sell to the neighboring provinces, and trade for food; and by persons (Spaniards as well as Indians) who have been in the mines opened by those mountaineers." As early as 1624, the workings of the Igorots appear to be very old, and many of them were already abandoned. An engineer conversant with Chinese methods of mining told me recently that it was his belief that the Igorots had learned their methods from the Chinese. See Becker's account on native methods of mining in *21st Ann. Rep. U. S. Geolog. Surv.* (1901), III, 576–680. Quirante writing in 1624 (Blair and Robertson, ut supra, 20, 276–279) says that the Igorot men, women, and children were accustomed to wash gold in the small mountain streams during the rainy season. This was traded in the lowlands for cattle and other animals by its quantity as determined by sight instead of by weight. Quirante says that the natives had five hills where they had tapped the gold-bearing quartz rock, although they obtained but a small amount of the metal. The workings as described by Quirante appear to have been rather extensive. Their tools he says were "certain stakes of heavy wood fashioned like pickaxes, with the knot of the said stake larger at the end of it, where, having pierced it, they fit into it a small narrow bit of iron about one palmo long. Then seated in the passages or works, as the veins prove, they pick out and remove the ore, which having been crushed by a stout rock in certain large receptacles fixed firmly in the ground, and with other smaller stones by hand, and having reduced the ore to powder, they carry it to the washing-places." The gold was then obtained by repeated washings and crushings. Under Quirante's directions 26 assays of the ore taken from the old workings were made. Worcester [*This Journal* (1906), 1, 848] says of the gold mining of the Lepanto-Igorots: "The men have mined gold for centuries. They work over the faces of exposed cliffs, when necessary suspending themselves by means of rattans, and pick out the streaks of rich ore which show free gold. This they dig with their crude iron or steel implements, the use of powder being unknown among them. The ore, after being dug, is crushed and panned. Both men and women also wash gold from the sands of the streams, and the women are especially famed for the skill with which they save the very light float gold—a skill which American miners have found it impossible to attain. The gold is usually sold in the form of dust, although it is sometimes melted and run into ingots."

color. He was much surprised at that and told it immediately to his companion. The latter, on seeing the hands of the former, was also surprised, and they both stood looking at it for some moments. After examining and studying it, they went home to get some wooden vessels. They returned to the abovesaid sitio, and gathered a big lump of unit. They performed the *dayas*, by which the saffron-colored substance is separated from the earth and sand. When the latter was separated from the former, the discoverers saw that the saffron-colored substance consisted of very small particles of dust, which when shaken in the abovesaid wooden vessels glittered brightly in the sun. One of the men continued to shake the particles in the wooden vessel for the purpose of studying them carefully, while the other was sitting beside a small fire warming himself. After some minutes of talk, they agreed to try to melt them in the fire. This they really did by placing a certain quantity of those particles in a bit of broken jar, which they set among the live coals. After a few hours they obtained the result they desired. On becoming cool, they had a substance with the abovesaid color. But it was mixed with other substances, which were probably impurities from the coal which was used to melt the particles, and which had united with the abovesaid particles at the moment of melting. That abovesaid substance they called *bulauan* or *dadaan*, according to the condition in which it was found in the soil and subsoil when it was obtained and corresponding to its color. They continued to experiment in order to ascertain its uses. After a few days had passed, the abovesaid agreed to convert it into a kind of earrings which they called *dinanpulay*. At the present time only the wealthy people wear them, because of their excessive value, because of the difficulty in finding them, and because of the great cost of manufacture. Those discoverers continued their undertaking and succeeded in making a number of earrings, which they took to other rancherías to sell, as well as some pieces to Tagudin (Ilocos Sur). There the purchasers had the material tested by experts before buying it. As a consequence, it obtained the name of *balitoc*.[106] From those times we have continued to work that enterprise without cessation in spite of the difficulty and costliness of the work, and in fact in the way in which it was done in those days.

SABANGAN [107]

The township of Sabangan has 6 barrios, as follows: Bonayan, Goyan, Ilagan, Pingad, Namatec, and Sabangan (native name, Bait). Its total population is 2,232, of whom 37 are Christians

Smith [*Journ. Geol.* (1913), 21, 59, 60] thinks that at least 1,000 pesos per month are panned by the people of the Philippines. A manuscript conserved in the Philippine Library is entitled Noticia de los Ygorrotes, de sus pueblos, gentio, y minas de oro y de varias tentativas para su descubrimiento. Although undated, this manuscript is of the nineteenth century. It is a compiled account of Spanish contact with the Igorots and is accompanied by a map.

[106] Balitoc, the Ilocano word for gold.

[107] For a description of Sabangan, or Sabañgan, as it is sometimes written, see Perez, Igorrotes, 195–201. It is located 27 kilometers east of Cervantes.

and the rest Igorots. The inhabitants of Bonayan claim descent from Bintua and Olimen, a brother and sister, the only two people left alive "after the big flood." "A she hog from Pidipid strayed over to the place now called Bonayan and there had young ones. When the owners and others went after her they saw that the place was very fertile and well adapted for planting and good pasture for their live stock." The barrio of Ilagan was formed by the inhabitants of a place called Talo, who migrated en masse because of "the frequent visits of their neighbors, who were their enemies." The barrio of Pingad lays claim to great antiquity and size. During the Spanish régime, however, many of its inhabitants moved to other barrios. The barrio of Namatec was formerly located nearer the river, "but for protection from their more savage neighbors they moved * * * higher up the mountain." The population of this barrio is decreasing. Various legends and customs of the township are described as follows:

LEGEND OF THE ORIGIN OF THE WORLD

In ancient times the earth was flat. When Lomaoig (God) saw that on the earth all his people and every other living thing were mixed together, He said, "It is better that I make the earth float on water so that it could be inundated and the new creation that will come after will be more scattered and separated." A big flood came and destroyed every living thing except two people, who were brother and sister—Bintua, the brother, and Olimen, the sister. This brother and sister married each other and they had many descendants who are now scattered all over the earth.[108]

CAÑAO

The cañao is a sacrifice of chickens, hogs, and all other kinds of animals, offered to Lomaoig (God), that he may give them good health, better crops, and a better increase from their live stock.

MARRIAGE CEREMONY

At sunset, after supper, the young women go to their tribunal to sleep and the young men go to theirs. Late at night the young men go to the tribunal where the girls are sleeping, and the young man that wishes to get married speaks with the girl of his choice; then if the girl is willing she tells the young man to go and bring firewood to her father's house, and she takes *binobodan*[109] (a native drink made out of rice) and rice to the house of the young man's father. In this manner their parents know that their son and daughter wish to marry. Then the parents of both the young people agree that the young man shall go to the house

[108] See Blair and Robertson, ut supra, 5, 125–129, for the story regarding the separation and origin of different nations.

[109] Rather the rice that is left after tapuy is made, although here the word may be used as a synonym for tapuy. It is said to be more intoxicating than tapuy.

where the girl lives and there they have a cañao, for which they kill a chicken; three days later they have another cañao for which they kill a suckling pig, and after this cañao they become man and wife. After they have been living together for one year they have a cañao again for which they kill 3 or 4 hogs, at the third day of this cañao they kill a suckling pig, thus signifying that the cañao is over. After being married five years and after they have acquired a little property, they have another cañao, for which they prepare beforehand plenty of binobodan. Preparations for this cañao are commenced seven days before the date of the cañao; the day before the cañao they repair the roof of their house and bring in plenty of firewood. The day after all these preparations are completed the parents and relatives of both gather together there; then they kill a carabao and prepare food for all the people. In the meantime they send after all their relatives living in other towns. After all their relatives and visitors have arrived, the man and his wife erect in front of their house 4 pieces of wood; the pieces of wood are tied together at the top and spread out at the bottom; they kill a hog and roast it between these 4 pieces of wood; after it is roasted they cut the head off and place it on a little platform, which is fixed between these pieces of wood, about halfway up; this arrangement is called *bansa*. The married couple then dances the bansa, the man holding a basket while the woman scatters rice around it and in front of the house. The relatives and guests then make presents to the married couple, such as money, rice, or anything else that they wish to give. After this last ceremony is over, all the people are allowed to dance and sing as they please.

CAÑAO FOR THE SICK AND THE DEAD

When a person gets sick, a cañao is made for him, for which a chicken or a hog is killed, which serves as treatment for his or her sickness.

When a person dies, all the relatives of other towns are sent for. The dead are either buried early in the morning or late in the evening; the parents and relatives have a cañao for which a chicken is killed. Five days after the burial, all the people participating in this cañao go to the river and take a bath; for this occasion a chicken is killed over which a prayer is offered up for the soul of the dead. A year after, the parents and relatives of the dead person have one more cañao for which a she hog and 3 suckling pigs are killed. After this ceremony, the mourning for the dead is over.[110]

[110] The death-cañao described above is for the poor people. If the dead person is a rich Igorot, the cañao will last as long as there are any animals left to be killed. When about all the animals are killed, some old woman goes into a trance and while in that state pretends to see the man sitting along the mountain side, all tired out and unable to go any farther. She will communicate this to the relatives of the dead person, and they will immediately procure a horse and kill it in order that the dead man may have a horse to ride and in that manner reach his destination. During all this time the dead person is placed in a sitting posture, tied in a chair, raised up from the ground 4 or 5 feet. Under the chair a smouldering fire is built, thereby preserving the body. This lasts sometimes ten or twelve days, according to the number of animals to be killed.—W. A. MILLER. See also footnote 79.

MATERIAL OUT OF WHICH CLOTHES WERE MADE

The ancient people used G strings made out of pounded tree bark and basket-shaped hats woven out of *bical* (a wild bamboo). The *pingad* worn by the women was also made out of tree bark, pounded, finely twisted, and then woven into a cloth. (The pingad is a narrow blanket about 2 feet wide and long enough to reach around a woman's waist.)[111]

MANNER OF SETTLING COMPLAINTS

When a person has a complaint to make against anyone, all the old men of the community are called together, and the complainant states the nature of his complaint to them. They then send after the accused, and upon his arrival the complainant is asked to state his complaint before the accused; the accused then is allowed to make his statement; if neither party has any witnesses, the old men stick a fine needle in the top of their heads (complainant and accused) and he that bleeds loses the case. Another way: They make the complainant and the accused throw stones at each other and he that is not hit wins the case. Another way: They give to the complainant and to the accused [each] a small chicken, hatched by the same hen. Each one roasts his chicken before an open fire, without cleaning it, or taking the feathers off. When they are roasted they are cut into before the old men and he, the gall of whose chicken is the smallest, loses the case.[112]

CAÑAO FOR PLANTING AND HARVESTING

At the time for planting rice in seed beds, all the people in the community have a common cañao for which everybody kills a chicken. Before they begin to transplant their rice, they have the same kind of a cañao; also, when the planting is over. For ten days before the rice cutting commences, nobody is allowed to leave the town; during this time they have a cañao for which they kill hogs and chickens; after the ten days' cañao is over, one of the old men goes under a big tree (the sacred tree of the community) and there he sacrifices a chicken and offers up a prayer, and after this ceremony the rice cutting begins. After the rice is all cut, another cañao is held.[113]

After camote planting is over, every man in the community goes, with his spear and shield, to the mountains, and there calls in a loud and suppliant voice for the souls of the dead to come in. Upon their return to the town they go directly to their tribunals. Then an old man from each tribunal goes to get water and a spear and places them, while offering up a prayer, in front of his tribunal. The next day they kill a dog and place it in front of the tribunal and there they leave it as food for the spirits they have thus summoned.

When a cañao is about to commence all the paths and streets leading into the town are closed with brush and thorns in order that no one from another town may enter.

[111] See footnotes 26 and 49; and cf. Jenks, *Pub. P. I. Ethnol. Surv.* (1905), 1, 111–114.

[112] The first of the ordeals mentioned above is similar to the ordeal by pudong, described on page 518. Compare also page 512. See Jenks [*Pub. P. I. Ethnol. Surv.* (1905), 1, 169] for a description of the pudong.

[113] See footnote 28.

SUPERSTITIONS

When a person commences to build a house and he sees a rat or a mouse, he discontinues his work, as that predicts bad luck.

After all materials needed to build a house are prepared and ready to start the work, all the people of the community come to help; but after the house is built, if the owner sees a crow, a mouse, or a snake, he at once moves the house into another *solar* or lot. When his house is once more built, if he sees no more of these animals, he holds a three days' cañao, for which at first a chicken is killed and then some hogs. After all these ceremonies are over, if the owner has no bad dream or sees no bad omen, he will then inhabit the house. If within three days he sees or hears nothing, he holds another cañao of chicken, but if he sees anything that predicts bad luck, or has a bad dream, he leaves the house forever and finds himself another place to live.

The barrio of Sabangan is the central barrio of the township and when the Spaniards first came to this country they established their headquarters for the guardia civil there.

This document is made out by the presidente of the township together with the secretary, due to the fact that the teniente of the barrio, the old men, and the old women do not know how to read or write.

This document of information is signed by the presidente and the old men of the community who were all present, and is dated this date (July 6, 1911).

SAN EMILIO [114]

No legends or customs are related of this township. It is comprised of the following barrios, each of which is divided into two or more parts: San Emilio, Tiagan, Baang, Lancuas, Kalumsing, Sibsibu, Paltoc, and Matibuey. Parts of the township belonged formerly to Abra subprovince and to Ilocos Sur Province. The names of the old sites inhabited by the people of the present territory of the municipality were Ampagadan, Baioes, Bago, Lipay, Batbatay, Batingco, Petredo, Gunnabec, Bising, Bangbagas, Nagbukel, Liang, Paracad, Pitocan, Laqueb, Bacongan, and Limpa, but these places were deserted because of sickness, in accordance with Igorot custom. Part of the known history dates back to 1829. In Spanish times, a garrison of 1 lieutenant, 1 sergeant, 1 corporal, and 12 soldiers was stationed in San Emilio. The Filipino soldiers of the revolution followed them, and then the American soldiers were stationed there until 1904. One friar was stationed there from 1890 to 1897. "In 1894, the comandante politico militar and the friar enforced baptism upon the people of the townships of San Emilio and Concepcion. All the people, youths and adults, with no exceptions, were baptized, but the customs of the Igorots, such

[114] For a description of San Emilio, see Perez, Igorrotes, 243, 244. It was formerly a part of the district of Bontoc.

as performing cañaos and other habits, had not been forbidden up to date; but since the revolution in the Philippines none of our children have been baptized; the only ones are the children of the original Christians who are now living in this township." [115]

SELECTED BIBLIOGRAPHY

(1) BLAIR, E. H., and ROBERTSON, J. A. The Philippine Islands: 1493–1898. Cleveland (1903–1909). 55 vols. See index: Igorots.
(2) Census of the Philippine Islands. Washington (1905). 4 vols. See 1, 533–544. Compiled from accounts by Governor Dinwiddie of Lepanto-Bontoc and Governor Pack of Benguet.
(3) DINWIDDIE, W. Report on Igorots, Jan. 17 (1903). In Report of the Philippine Commission. Washington (1903), pt. 1, 833–836.
(4) DRASCHE, R. VON. Fragmente zu einer Geologie der Insel Luzon. Wien (1878), 36–45.
(5) IDEM. Datos para un estudio geológico de la isla de Luzon. Madrid (1881), 41–50. A translation of the preceding.
(6) EVELAND, A. J. Preliminary reconnaissance of the Mancayan-Suyoc mineral region, Lepanto, P. I. *Bull. P. I. Min. Bur.* (1905), No. 4.
(7) HERNANDEZ, ANTONIO. Reconocimiento de un criadero de cobre en el Monte Aban. Termino de Mancayan (1850).
(8) JORDANA Y MORERA, R. Bosquejo geográfico e historico-natural. Madrid (1885), 56–66.
(9) Memoria de la sociedad Cantabro-Filipina de Mancayan. Binondo (1871). There are several reports of the operations of the above company.
(10) Memoria del distrito de Lepanto. No date, no place.
(11) MEYER, A. B., and SCHADENBERG, A. Album von Philippinen-typen. Dresden (1891). Plates 32, 33, 43, 44, 47, and 48 show types of Lepanto.
(12) *The Mineral resources of the Philippine Islands.* Published annually by the Bureau of Science, Manila.
(13) PEREZ, ANGEL, O. S. A. Igorrotes. Manila (1902), 29.
(14) SANTOS, J. M. Informe sobre las minas de cobre de las rancherias de Mancayan, Suyuk, Bumucun y Agbao. Manila (1861).
(15) IDEM. Same title. Manila (1862).
(16) SMITH, W. D. The geology of Luzon. *Journ. Geol.* (1913), 21, 29–61.
(17) WORCESTER, D. C. Our fifteen years' work in the Philippines. *Munsey,* February (1914).
(18) IDEM. The non-Christian tribes of northern Luzon. *Phil. Journ. Sci.* (1906), 1, 791.

[115] Christianity has never obtained any great hold among the Igorots. In Lepanto, the work of the missionaries was carried on first from the mission of Cayan. Lillo de Gracia, Distrito de Lepanto, 17, says that the Igorots called all Christian Filipinos Ilocanos. The Christian population of the subprovince is found for the most part in Cervantes, Concepcion, and San Emilio [Census of the Philippine Islands. Washington (1905), 1].

ILLUSTRATIONS

(Plates I and II are from photographs by Martin; Plate III is from a photograph by Worcester; Plates IV to IX are from photographs by Eveland.)

PLATE I

FIG. 1. Lepanto-Igorot woman.
2. Lepanto-Igorot woman, showing tattooing.

PLATE II

FIG. 1. The ato at Sagada.
2. Group of Igorots at Cervantes with a jar of tapuy.

PLATE III

Burial place of Lepanto Igorots.

PLATE IV. IGOROT COPPER SMELTING

FIG. 1. First roasting.
2. Completion of the roast.

PLATE V. IGOROT COPPER SMELTING

FIG. 1. Clearing the matte.
2. Roasting the matte.

PLATE VI

Old Spanish road to copper mines at Mancayan, showing contact between overlying quartz porphyry and Mancayan diorite.

PLATE VII

Copper mines, Mancayan.

PLATE VIII

Smelter site, Cantabro-Filipino Company, Mancayan.

PLATE IX

Old native workings at Suyoc.

TEXT FIGURE

FIG. 1. Map of a part of Mountain Province, Luzon.

Fig. 1. Lepanto-Igorot woman.

Fig. 2. Lepanto-Igorot woman, showing tattooing.

PLATE I.

Fig. 1. The ato at Sagada.

Fig. 2. Group of Igorots at Cervantes with a jar of tapuy.

PLATE II.

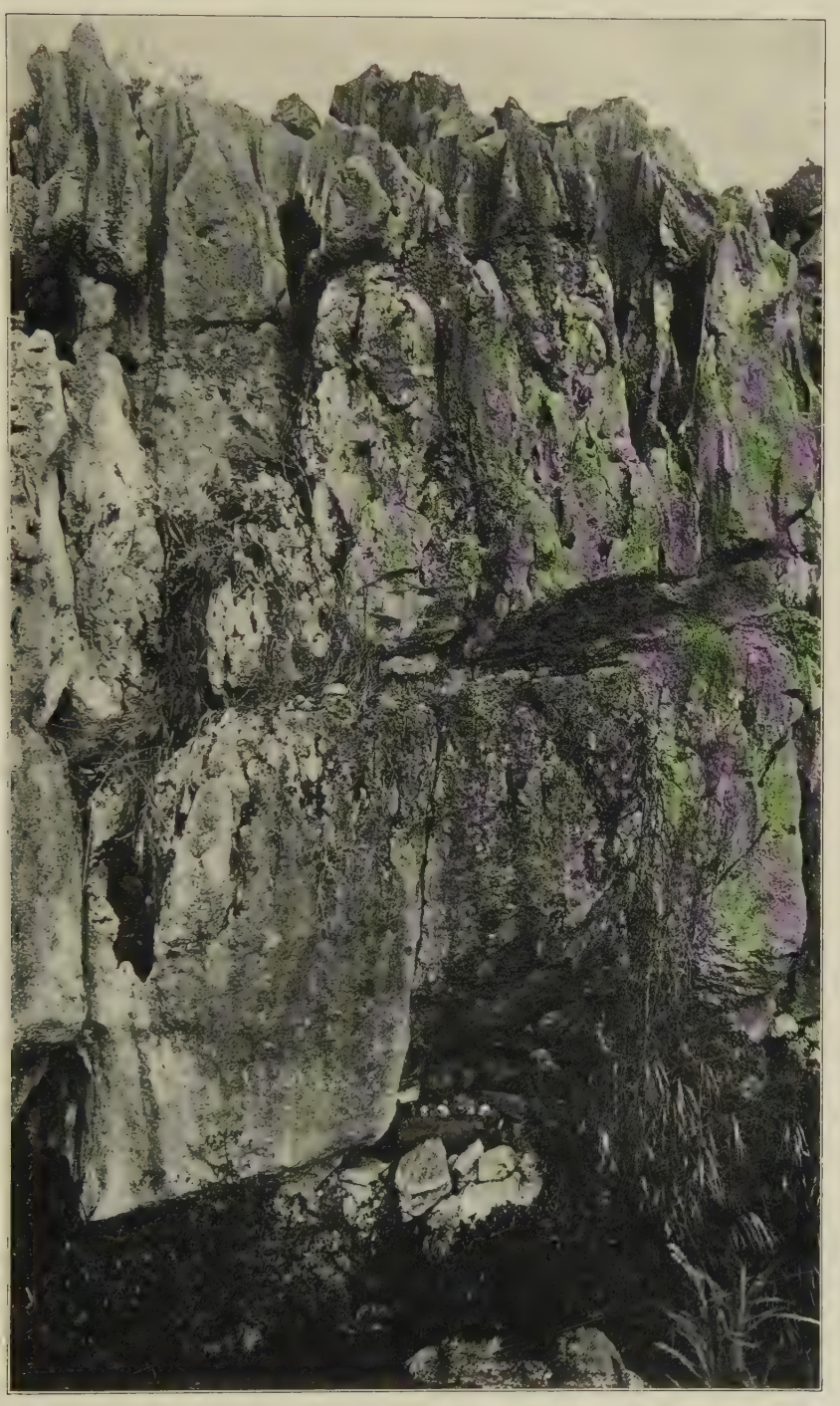


PLATE III. BURIAL PLACE OF LEPANTO IGOROTS.

Fig. 1. First roasting.

Fig. 2. Completion of roast.

PLATE IV. IGOROT COPPER SMELTING.

Fig. 1. Clearing the matte.

Fig. 2. Roasting the matte.

PLATE V. IGOROT COPPER SMELTING.

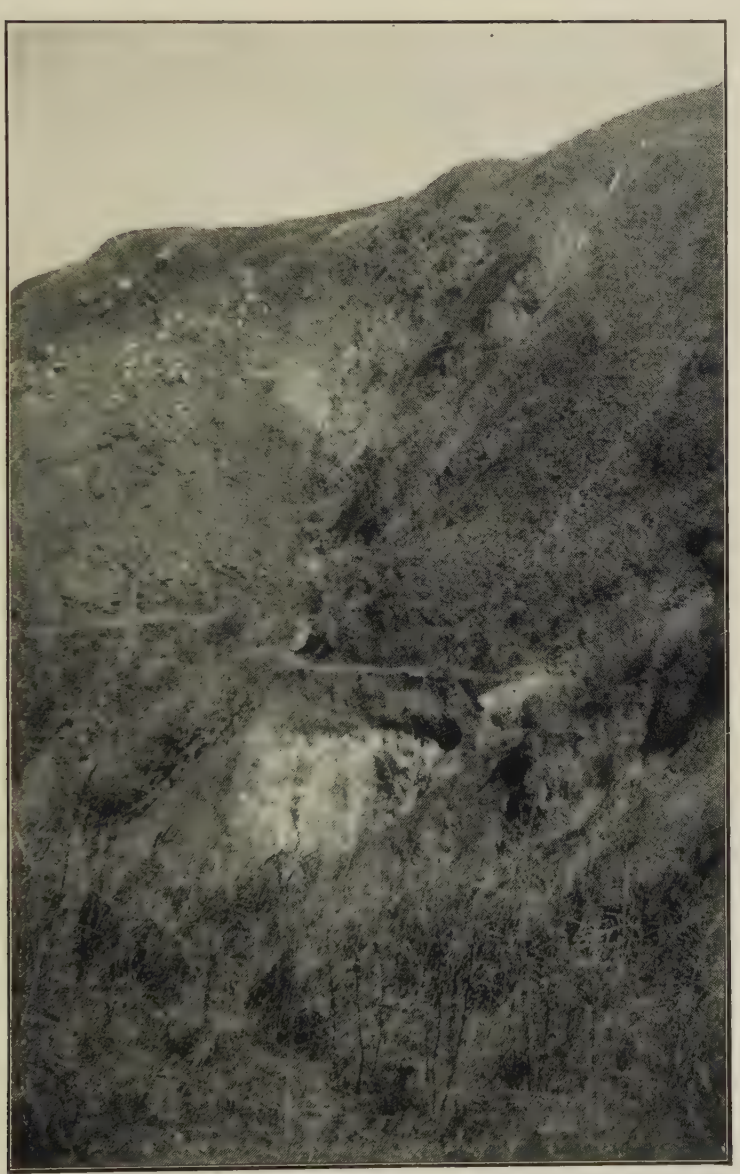


PLATE VI. OLD SPANISH ROAD TO COPPER MINES, MANCAYAN, SHOWING CONTACT BETWEEN OVERLYING QUARTZ PORPHYRY AND MANCAYAN DIORITE.

PLATE VII. COPPER MINES, MANCAYAN.

PLATE VIII. SMELTER SITE, CANTABRO-FILIPINO COMPANY, MANCAYAN.

PLATE IX. OLD NATIVE WORKINGS AT SUYOC.

DESCRIPTION OF A NEW SPECIES OF PRIONOCHILUS FROM THE HIGHLANDS OF LUZON

By Richard C. McGregor

(*From the Section of Ornithology and Taxidermy, Biological Laboratory, Bureau of Science, Manila, P. I.*)

One colored plate

Prionochilus anthonyi sp. nov.

Specific characters.—Top of head with a conspicuous yellow patch; remainder of upper parts glossy black; chin and throat white; remainder of under parts yellow; under tail-coverts cadmium yellow.

Type.—No. 7515, ♂, Bureau of Science collection. Polis Mountain, Ifugao subprovince, Luzon, P. I. Collected February 7, 1913, by R. C. McGregor and A. Celestino.

Description of type.—Forehead, lores, circumocular region, and auriculars black with very little gloss; crown and occiput cadmium yellow; neck, back, rump, upper tail-coverts and median and lesser wing-coverts black glossed with dusky dull bluish green; primaries and their coverts, secondaries and their greater coverts, and rectrices fuscous to chaetura black; edge of wing, wing-lining, axillars, and inner edges of primaries white; chin, throat, and malar region white; remainder of under parts green or yellow; sides of breast citrine, becoming more yellowish on flanks; middle of breast and abdomen empire yellow; under tail-coverts cadmium yellow. Iris brown; bill black; legs, feet, and nails blackish slate; soles pale yellow. Length in flesh, 106 mm.; wing, 56; tail, 29; tarsus, 16.

Remarks.—*Prionochilus anthonyi* does not resemble any other Philippine species of the genus and appears to differ from all other described species in pattern of coloration. The bill is similar in proportions to that of *P. quadricolor* Tweeddale, but is very much larger. The bill is much stouter than in *P. johannæ* Sharpe. The type and only specimen was collected in the mossy forest near the summit of the Government trail between Banaue and Bontoc, within a few meters of the rest house on the Banaue side. The elevation of the rest house is about 2,000 meters. The species is named for Alfred Webster Anthony.

ILLUSTRATION

PLATE I. *Prionochilus anthonyi* sp. nov. (Drawn and colored from the type by T. Espinosa.)

PLATE I. PRIONOCHILUS ANTHONYI SP. NOV.

NITIDULIDÆ DES PHILIPPINES RECOLTÉS PAR C. F. BAKER[1]

Par A. GROUVELLE
(*Paris, France*)

Brachypeplus ornatus sp. nov.

Ovatus, abdominis apice acuminatus, modicissime convexus, nitidulus, tenue flavo-pubescens, capite, prothorace abdomineque rufo-testaceus, elytris ochraceo-testaceus; capite vix infuscato, prothoracis margine postico medio, elytrorum lateribus apicequi, abdominis segmentorum disco nigris. Antennae breves; clava paulo longiore quam latiore, apice breve et obtuse acuminato-pulvinata; articulis 7° et 8° praecipue ultimo valde transversis. Caput transversum, subdepressum, crebre punctulatum, ante antennarum bases sat productum, subtruncatum; temporibus minutis, acutis. Prothorax valde transversus antice quam postice vix angustior, lateribus rotundatus; angulis anticis posticisque obtusis, vix hebetatis; basi truncata, utrinque scutelli vix perspicue breveque sinuata, tenuiter marginata. Scutellum subsemicirculare, tenuissime punctulatum. Elytra paulo breviora quam simul latiora, tenuiter punctato-striata; striarum intervallis unilineato-punctatis; striis integris. Abdominis segmentum ultimum apice obtuse acuminatum.

Long., 4 mm.

LUZON, Laguna, Los Baños (2 individus).

Ovale, abacuminé vers le sommet de l'abdomen, un peu plus de deux fois plus long que large dans sa plus grande largeur; très faiblement convexe, brillant, couvert d'une fine pubescence flave, médiocrement visible, roux testacé sur la tête, le prothorax et l'abdomen, testacé-jaunâtre sur les élytres; marge antérieure de la tête rougeâtre, tête à peine enfumée; milieu de la marge postérieure du prothorax, marges latérales et épipleures des élytres et milieu des segments de l'abdomen noirs. Antennes courtes, massue noirâtre; 1er article épais, un peu plus long que large, 2^{e} moins épais, une fois et demie plus long que large, 3^{e} grêle, 4^{e} à peine allongé, 5^{e} et 6^{e} subtransversaux, 7^{e} et 8^{e} (8^{e} surtout) très transversaux, le 8^{e} plus large que le 7^{e}; 9^{e} et 11^{e} formant une massue brusque, un peu plus longue que large, dont

[1] Proof read by C. F. Baker.

le dernier article, un peu plus long que les deux premiers, est terminé par un bouton conique, émoussé, surbaissé. Tête moins de deux fois plus longue que large, subdéprimée, rétrécie transversalement en avant des bases des antennes; épistome assez saillant, parallèle, subtronqué en avant; front très densément pointillé, faiblement impressionné en avant des bases des antennes, de chaque côté de l'épistome; épistome presque lisse yeux échancrant les margues du front, médiocrement saillants, à très petites facettes; tempes petites, anguleuses; labre environ quatre fois plus large que long. Prothorax tronqué en avant, à peine plus étroit en avant qu'à la base, arrondi sur les côtés, environ deux fois $\frac{1}{4}$ plus long que large dans sa plus grande largeur, très densément pointillé, un peu plus fortement sur les marges latérales; angles antérieurs et postérieurs obtus, à peine émoussés; côtés finement rebordés; base tronquée, briévement sinuée de chaque côté de l'écusson, très finement rebordée. Ecusson presqu'en forme de demi-cercle, finement et très densément pointillé. Elytres tronqués à la base, arrondis aux épaules, subparalléles, arrondis aux angles postérieurs-externes, séparément et très largement arrondis au sommet, un peu moins longs que larges ensemble, finement ponctués-striés; stries entiéres; intervalles larges, chacun avec une ligne de points beaucoup plus larges que les stries; calus huméraux marqués; marges latérales fortement déclives, très étroitement rebordées. Segments apparents de l'abdomen très densément pointillés; dessous roux testacé, glabre; 1er et 2e segment (1er mesuré entre la hanche et le sommet) subégaux, plus courts que le 3e, 5e presqu'aussi long que 3e et 4e réunis.

Amystrops bakeri sp. nov.

Breviter oblongus, convexiusculus, nitidulus, tenuissime flavopubescens, ferrugineus, creberrime tenuissimeque punctulatus. Antennae fere breves; 1° articulo incrassato, intus valde rotundato-producto, clava paulo longiore quam latiore, articulis haud densatis. Caput transversissimum, subdepressum, antice sinuatum, dense punctulatum; oculis productis, temporibus haud indicatis, lateribus retrorsum valde convergentibus. Prothorax transversissimus, antice valde angustatus; margine antico medio truncato, utrinque antrorsum late subanguloso-producto; lateribus arcuatis, juxta basin parallelis, praecipue ad basin sat late concavo-explanatis; angulis posticis acutis, retrorsum productis; basi medio subsinuata, utrinque ante angulos posticos subtruncata. Scutellum triangulare, transversissimum. Elytra humeris

rotundata, lateribus arcuata, vix ampliata, apice subtruncata, breviora quam simul in maxima latitudine latiora; elytrorum angulis suturalibus breviter rotundatis. Pygidium apice rotundato-acuminatum.

Long., 2.3 mm.

LUZON, Laguna, Los Baños (2 individus).

Oblong, environ une fois et demie plus long que large dans sa plus grande largeur, médiocrement convexe, couvert d'une pubescence flave, à peine visible, ferrugineux, faiblement brillant, très densément et très finement pointillé, sauf sur la tête. Antennes presque courtes; 1er article fortement dilaté, arrondi en dedans, à peine plus long que large, 2e à peine épaissi par rapport au 3e, un peu plus long que large; 3e moins d'une fois et demie plus long que large, 4e et 5e subcarrés, 6e un peu transversal, 7e encore plus, 8e très court et plus large que les précédents; 9e à 11e formant une massue très accentuée, un peu plus longue que large, légèrement atténuée vers l'extrémité, à articles faiblement séparés dont le 2e article est un peu plus court que le 1er et assez nettement plus court que le 3e, ce dernier terminé par un bouton conique très surbaissé. Tête beaucoup plus de deux fois plus large que longue, subdéprimée, densément pointillée, impressionnée de chaque côté vers la naissance de l'antenne; bords latéraux fortement convergents en arrière avant les yeux, sinués en avant pour l'insertion des antennes; épistome paralléle, faiblement sinué en avant; labre bien visible, arrondi aux angles antérieurs, sinué au milieu de sa marge apicale; yeux très saillants; tempes nulles. Prothorax très rétreci an avant, arrondi sur les côtés, subparallèle à la base, environ deux fois et $\frac{1}{3}$ plus large à la base que long; bord antérieur tronqué au milieu, saillant en avant, de chaque côté, en formant un lobe anguleux émoussé; côtés bordes par un fin bourrelet et par une marge concave plutôt étroite en avant, dilatée sur la région des angles postérieurs; ceux-ci aigus, un peu saillants en arrière; base largement subsinuée au milieu, presque tronqué de chaque côté de cette sinuosité; ponctuation dessinant presque des strigosités transversales. Ecusson triangulaire, plus de deux fois plus large à la base que long. Elytres sinués à la base de chaque côté de l'écusson, arrondis aux épaules, arqués sur les côtés, à peine élargis, presque tronqués ensemble au sommet, nettement moins longs que larges ensemble; angles suturaux brèvement arrondis; marges latérales bordées par un fin bourrelet effacé vers le sommet et par une marge concave plus large à la base que celle du prothorax en avant, s'effacant vers l'extrémité de l'élytre, se raccordant avec le disque de

l'élytre par une partie en pente assez inclinée; calus huméraux assez marqués. Pygidium déprimé, émoussé à l'extrémité, densément et finement pubescent. Pygidium du mâle tronqué, complété par un segment supplémentaire triangulaire, émoussé au sommet.

Haptoneus latior sp. nov.

♂ : Breviter ovatus, ad apicem attenuatus, convexus, nitidus, vix perspicue flavo-pubescens, ferrugineo-testaceous. Antennarum primum articulum intus rotundato-dilatatum, tam elongatum quam latum; clava sesquilongior quam latior. Caput transversissimum occipite convexum, fronte subdepressum, antice modice sinuatum, tenuissime et parce punctulatum; oculis prominulis, temporibus minutissimis acutis. Prothorax transversissimus, antice valde angustatus, tenuiter parceque punctulatus; margine antico medio truncato, utrinque antrorsum late et modice rotundato-producto; lateribus arcuatis, fere stricte explanato-marginatis; angulis posticis acutis, hebetatis, retrorsum leviter productis; basi ante scutellum et utrinque inter scutellum et angulos porticos subsinuata. Scutellum triangulare, basi duplo latius quam longius, vix perspicue punctulatum. Elytra basi quam prothorax paulo angustiora, humeris obtuse angulosa, apicem versus arcuatim angustata, apice fere conjunctim truncata, breviora quam simul basi latiora, subdense punctulata, lateribus latius quam prothorax explanato-marginata. Pygidium depressum, apice breviter rotundatum. Tibiae intermediae posticaeque maris circiter ad medium dilatatae.

Long., 1.7 mm.

LUZON, Laguna, Los Baños (1 individu).

Ovale, atténué vers l'extrémité du corps, environ une fois et un tiers plus long que large dans sa plus grande largeur, assez convexe, brillant, à peine visiblement pubescent, d'un testacé ferrugineux. Antennes médiocrement longues; 1er article épais, fortement arrondi en dedands, environ aussi long que large, 2^{e} un peu épais, moins d'une fois et demie plus long que large, 3^{e} à 8^{e} progressivement un peu plus larges, 3^{e} environ une fois et demie plus long que large, 4^{e} et 5^{e} subcarrés, 6^{e} à 8^{e} progressivement plus transversaux, 9^{e} à 11^{e} formant une massue compacte, environ une fois et demie plus longue que large, dont le premier article presqu'en forme de demi-sphère est plus long que less deux autres, et dont le dernier un peu plus étroit que le précédent est terminé par un bouton subconique, très surbaissé. Tête environ deux fois plus large que longe, se rétrécissant fortement en avant et en arrière des yeux, convexe sur l'occiput, subdépri-

mée sur le front, brèvement et transversalement rétrécie entre le bord antérieur de l'oeil et l'insertion de l'antenne, peu saillante en avant de celle-ci, légèrement sinuée au bord antérieur, couverte d'une ponctuation extrêmement fine et éparse; yeux échancrant modérément les marges du front, saillants, tempes très petites, aigües. Prothorax très rétréci en avant, presque parallèle à la base, arrondi sur les côtés, environ deux fois plus long à la base que long, éparsément ponctué, mais un peu plus fortement que la tête; bord antérieur tronqué au milieu, modérément saillant en avant de chaque côté en lobe largement arrondi; côtés bordés par une marge concave presqu'étroite; angles postérieurs un peu saillants en arrière, émoussés; base subsinuée devant l'écusson et largement subsinuée de chaque côté entre l'écusson et l'extrémité. Ecusson triangulaire, deux fois plus large à la base que long, éparsément et à peine visiblement pointillé. Elytres un peu plus étroits à la base que le prothorax, en angle obtus aux épaules, arqués, atténués vers l'extrémité séparément et un peu obliquement tronqués au sommet, nettement moins longs que larges ensemble à la base, couverts d'une ponctuation assez dense plus forte que celle du prothorax, atténuée vers le sommet; bords latéraux bordés un peu plus largement que ceux du prothorax; marges latérales du disque brusquement déclives; calus huméraux à peine marqués. Tibias intermédiaires et postérieurs du mâle élargis dans la moitié apicale.

Appartient au groupe de *H. lotrolus* Er., mais taille plus grande et forme beaucoup plus large.

Aphenolia bakeri sp. nov.

Oblonga, modice convexa, nitidula, glabra, testaceo-ferruginea. Antennae modicissime elongatae; 1° articulo intus valde lobato-producto, clava sesquilongiore quam latiore, 2° articulo transversissimo, quam 1° et 3° paulo latiore. Caput transversum, convexiusculum, antice truncatum, dense punctulatum, utrinque ad antennae basin puncto notatum; oculis prominulis. Prothorax antice quam postice paulo angustior, lateribus praecipue ad basin arcuatus, vix perspicue undulatus, fere 2 et ⅓ latior in maxima latudine quam longior; crebre punctulatus; margine antico medio truncato, utrinque oblique lateque modice producto; angulis anticis hebetatis, posticis obtusis, marginibus lateralibus antice modice, ante angulos late concavo-explanatis; basi truncata, vix perspicue marginata. Scutellum transversum, subtriangulare, crebre punctulatum. Elytra humeris rotundata, lateribus arcuata, parum ampliata, apice separatim sub-oblique truncata, 1 et ⅓ longiora quam simul in maxima latitudine latiora, crebre et

quam prothorax paulo validius punctata; lateribus stricte marginatis. Pygidium in maxima parte apertum, apice acuminatum, crebre punctulatum.

Long., 3 mm.

LUZON, Laguna, Los Baños (1 individu).

Oblong, un peu plus de deux fois et demie plus long que large dans sa plus grande largeur, modérément convexe, un peu brillant, glabre, testacé-ferrugineux. Antennes médiocrement allongées; 1er article dilaté en dedans en lobe arrondi; 2e un peu épais, environ une fois et demie plus long que large; 3e grêle, plus d'une fois et demie plus long que large; 4e à 8e progressivement un peu plus épais; 4e et 5e subcarrés; 6e et 7e modérément transversaux, 8e nettement transversal; 9e à 11e formant une massue environ une fois et demie plus longue que large, dont le 2e article est très transversal et un peu plus large que les deux autres et dont le dernier est en majeure partie formé d'un bouton apical conique. Tête environ deux fois plus large que longue, rétrécie transversalement en avant des yeux, obliquement en arrière; épistome parallèle, tronquée au bord antérieur; occiput convexe, front subdéprimé, densément pointillé, marqué de chaque côté près de la base de l'antenne d'un point enfoncé; yeux échancrant modérément les marges latérales du front, présentant une saillie transversable subégale à la longueur du bord de l'orbite; labre profondément et étroitement incisé au milieu, environ quatre fois plus large à la base que long. Prothorax un peu plus rétréci en avant qu'à la base, arrondi, à peine ondulé sur les côtés, présentant sa plus grande largeur vers le premier quart de la longueur à partir de la base, environ deux fois et un tiers plus large dans sa plus grande largeur que long; bord antérieur assez brièvement tronqué dans le milieu, saillant un peu obliquement en avant de chaque côté, en formant un arc peu accentué et peu régulier; angles antérieurs obtus, émousses, postérieurs obtus; base tronquée, très finement et à peine visiblement rebordée. Bords latéraux bordés par une marge explanée concave, très modérément large, se développant sur la région des angles postérieurs, se raccordant en pente peu prononcée avec le disque; ponctuation fine très serrée. Ecusson subtriangulaire, transversal, très densément pointillé. Elytres tronqués à la base, brièvement arrondis aux épaules, arqués sur les côtés, très faiblement élargis, obliquement et séparément tronqués au sommet, environ une fois et un tiers plus longs que larges ensemble dans leur plus grande largeur, couverts d'una ponctuation très serrée, un peu plus forte que celle du prothorax; marges latérales étroi-

tement rebordées, raccordées avec le disque des élytres par une pente presque normale au plan de l'insecte; calus huméraux à peine marqués. Pygidium acuminé au sommet, en majeure partie découvert, un peu convexe, très densément et très finement ponctué.

Cryptarcha bakeri sp. nov.

♂ : Ovata, convexa, nitidula, tenuiter alutacea, pube flava in prothoracis marginibus anticis lateralibusque densata vestita, picea; margine antico capitis prothoracisque dilutiore, in singulo elytro duabus maculis fuseo-rufis: 1ª basilari, juxta callum humerale, 2ª transversa, antrorsum arcuata, ultra medium, suturam subattingente. Antennae breves; clava sesquilongiore quam latiore, 1° articulo conico, transverso, 2° transversissimo, 3° transverssissimo, sed quam 2° paulo angustiore, apice pulvino acuminato, valdissime depresso, terminato. Caput transversum, dense punctulatum; margine antico inflexo, subtruncato. Prothorax transversus, antice valde augustatus, dense punctulatus; margine antico late et haud profunde emarginato; angulis anticis antrorsum productis; lateribus arcuatis, juxta basin, ad apicem modice convergentibus; angulis posticis acutis, retrorsum productis; basi subtruncata, utrinque scutelli breviter sinuata. Scutellum transversissimum, apice late rotundatum, tenuissime alutaceum. Elytra fere sesquilongiora quam simul basi latiora, apice conjunctim rotundata, dense punctulata, punctis subasperis.

Long., 3.2 mm.

LUZON, Laguna, Los Baños (1 individu).

Ovale, environ deux fois et un tiers plus long que large dans sa plus grande largeur, convexe peu brillant, très finement alutacé, couvert d'une pubescence flave, plus allongée et plus dense sur le bord antérieur du prothorax et sur ses marges latérales, formant des bordures latérales beaucoup plus larges que la bordure antérieure; couleur brun de poix, plus claire sur le devant de la tête et vers les marges latérales du prothorax; sur chaque élytre deux taches d'un roux sombre: la 1re basilaire, suballongée, en dedans du calus huméral, la 2e au delà du milieu, transversale, arquée en avant, atteignant presque la suture et se continuant contre le bord latéral par une très étroite bordure atteignant le sommet. Antennes brun de poix clair, relativement courtes; 1er article plus épais, moins de deux fois plus long que large; 2e moins épais, environ une fois et demie plus long que large; 3e grêle environ aussi long que 3e; 4e et 5e subégaux, un peu allongés; 6e à 8e subcarrés; 9e à 11e formant une massue bien accentuée,

environ une fois et demie plus longue que large, dont le 1er article transversal est en forme de tronc de cône renversé, le 2e est très transversal et le 3e subégal au 2e mais un peu plus étroit et terminé par un bouton acuminé à peine saillant. Tête arrondie en avant, plus de deux fois plus large que longue, densément pointillée; marge antérieure infléchie, subtronquée; labre caché, yeux non saillants. Prothorax rétréci en avant, arrondi sur les côtés, légèrement rétréci vers l'avant, dans la partie basilaire, très nettement plus de deux fois plus large à la base que long, à peu près ponctué comme la tête; bord antérieur vu de dessous largement et peu profondément échancré, arrondi dans le milieu; angles antérieurs, vus de dessous, un peu aigus, saillants en avant, vus de face également aigus, finement rebordés comme les côtés; angles postérieurs saillants en arrière, vus de dessus un peu aigus, vus de face presque droits; base subtronquée en dedans des angles postérieurs, brièvement sinuée de chaque côté de l'écusson. Ecusson très transversal, largement arrondi au sommet, très finement alutacé. Elytres arqués à la base, en angles obtus, à peine émoussés aux épaules, rétrécis vers le sommet, arrondis ensemble à l'extrêmité, brièvement déhiscentes, couverts de points subrapeux, un peu plus forts et plus serrés à la base que ceux du prothorax, atténués vers le sommet; stries suturales effacées sur la moitié basilaire de la longueur. Pattes larges. Dernier segment de l'abdomen du mâle relevé dans la partie médiane de sa marge apicale; avant-dernier légèrement impressionné.

INDEX

[New names are printed in **heavy-faced type**; numbers in *italic* indicate synonyms or references of minor importance.]

A

Aban, organization of, 517.
Acanthocepola krusensternii (Temm. and Schleg.), 69.
Acanthocera Melichar, 435.
punctifrons Melichar, 436.
Acarua, *231*.
Achilinæ, 176.
Acidopria monachanta Kieffer, 287.
tetratoma Kieffer, 287.
tricornuta Crawford, 287.
variicornis Kieffer, 237.
Aclista punctulata Kieffer, 287.
Acmaeodera luzonica Nonfr., 83.
Acolus luteipes Crawford, 286.
Acromitus, 210.
maculosus Light, *195*, 197, 212.
Ægle sepiaria DC., *250*.
Æolus beccarii Candèze, 441.
multilineatus, *441*.
Agaua barrio, 506.
Ageha, 250.
Agrilus **atomus** Kerremans, 87.
bakeri Kerremans, 85.
balnearis Kerremans, 87.
discicollis H. Deyr., 85.
fontanus Kerremans, 86.
luzonicus Kerremans, 84.
monticola Kerremans, 85.
nigrocinctus Saund., 85.
vilis Saund., 85.
Agrypnus bifoveatus Candèze, 441.
Alacan, old name for Ampusungan, 471.
Alaus scytale Candèze, 441.
Albatross collection, 196.
Alcyonaria, Philippine, notes on, part II, 233.
Alcyonium ramosa Q. and G., *237*.
Allocynips Kieffer, 185.
ruficeps Kieffer, 186.
Alpheus, 324.
Alseodaphne, *254*.
Ambassidæ, 65.
Amblygaster clupeoides (Bleeker), *11*.
perforatum (Cantor), *11*.
sirm (Rüppell), *11*.
Amia bifasciata (Rüppell), 63.
döderleini Jordan and Snyder, 64.
elizabethæ Jordan and Seale, 63.
frænata Valenciennes, *64*.
kiensis Jordan and Snyder, 64.
lineatus (Schlegel), 64.
marginatus Döderlein, 64.
semilineatus (Schlegel), 64.
trimaculatus Richardson, *63*.
Ammothea (Alcyonium) ramosa (Q. and G.), *237*.
carnosa Küken., 239.
digitatum May, *237*, *238*.
Ampusungan, manuscript from, 471.
Amystrops **bakeri** Grouvelle, 536.
Anasis lævicollis Raffray, 454.
Anchastus rufangulus Candèze, *446*.
unicolor Candèze, 446.
vittatus Fleut., 445.
Anchovia dussumieri Cuv. and Val., 59.
indica (Van Hasselt), 59.
Anchovies, 11, 59.
Angaki, barrios of, 473.
manuscript from, 473.
Anito, 472.
Anopedias luzonicus Ashmead, 286.
Anteris atriceps Kieffer, 286.
Ao-gashi, 255.
Aosuji-ageha, 252.
Ao-tsuzura, 256.
Aparamesius carinatus Kieffer, 287.
depressus Kieffer, 287.
filicornis Kieffer, 287.
levistilus Kieffer, 287.
Apegus Foerster, 295.
maquilingensis Kieffer, 295.
Aphanisticus **bodongi** Kerremans, 88.
Aphenolia **bakeri** Grouvelle, 539.
Apobletes corticalis Lewis, *423*.
difficile Schm., *424*.
feriatus Lewis, 423.
fictitius Lewis, 424.
platysomoides Lewis, *424*.
schaumi Mars, *423*.
semperi Lewis, *424*.
tener Marseul, 423.
Apobletus diosipygus Marseul, *426*.
Apocryptes bato (Hamilton-Buchanan), 77.
Apogonichtyidæ, 63.
Aristolochia debilis S. and Z., *256*.
Arius falcarius Richardson, 60.
Ashmeadopria Kieffer, 308.
bakeri Kieffer, *287*, 308.
bipunctata Kieffer, *287*, 308, 309.
luzonica Kieffer, 308.
nigriventris Kieffer, *287*, 308.
subcarinata Kieffer, 308, 309.
(?) trichota Kieffer, 309.
Atherina bleekeri Günther, 60.
forskålii Rüppell, 60.
Atherinidæ, 60.
Atholus torquatus Mars., *428*.

Atolla bairdii Fewkes forma valdiviæ Vanhöffen, 196.
wyvillei Haeckel, 196.
Atya, 324.
Augila Stål, *278*.
Augilina Melichar, 276, *278*.
longipes Melichar, 276.
Aurantiaceæ, *254*.
solida Browne, *200*.
Aurellia labiata Chamisso and Eysenhardt, *195*, 197, 200.

B

Baclad, used in catching crustaceans, 320.
Bagnen, description, religion, and customs of, 481.
Bagoong, 4.
BAKER, C. F., Studies in Philippine Jassoidea: I, Some remarkable Tettigoniellidæ, 409.
Bamboo grass, 260.
Bambusaria Melichar, 274.
picta Melichar, 274.
Banaao, barrios of, 484.
climate of, 488.
Banak, 4.
Banded barracuda, 61.
Bandfishes, 69.
Banguitan barrio, 507.
BANKS, CHARLES S., A new Philippine malaria mosquito, 405.
Barbus **bantolanensis** Day, 188.
ivis Seale, *191*.
manguaoensis Day, 189.
palawanensis Boulenger, *191*.
Barracuda, 7, 61.
banded, 61.
Batraxis hirtella Raffray, *452*.
nitidula Raffray, 452.
pubescens Raffray, 452.
sinensis Raffray, *453*.
Batrisocenus clavipes Raffray, 452.
hamatipes Raffray, 452.
squamiceps Raffray, 452.
tumidipes Raffray, 451.
Batrisodes cavicola Raffray, 451.
clavipes Raffray, *452*.
hamatipes Raffray, *452*.
squamiceps Raffray, *452*.
tumidipes Raffray, *451*.
verticinus Raffray, 451.
Batrisus cavicola Raffray, *451*.
verticinus Raffray, *451*.
Bauco, barrio of, 493.
customs in, 494.
its barrios and general history, 492.
marrying children in, 493.
Belionota fallaciosa H. Deyr., 84.
Belonidæ, 60.
Belytidæ, *287*, 310.
Benna Walker, *175*.
sinuata Melichar, 269.
Bennaria Melichar, 175.
bimacula Melichar, 175.
Besao, barrios of, 498.
history of, 498.
Bethylidæ, 285.
Bhooria, *410*.
BICKHARDT, H., Philippinische Histeriden: I, 423.
Birth of a child, Igorot customs in connection with, 508.
Bloaters, 8.
Bobo, used in catching crustaceans, 320.
Bolarge, 4.
Boleophthalmus boddaerti Schlegel, *74*.
chinensis (Osbeck), 74.
glaucus Day, 74.
Bostrychus sinensis (Lacépède), 74.
Brachypeplus **ornatus** Grouvelle, 535.
Bryaxis dama Raffray, *454*.
laevicollis Raffray, *454*.
laticollis Raffray, *453*.
manillensis Raffray, *453*.
Buprestides recueillis aux îles Philippines par C. F. Baker, 83.
Butis butis (Hamilton-Buchanan), 74.
caperata Cantor, 74.
Butterfishes, 63.
Butterfly fishes, 71.

C

CAIN, ANDREW W., History of the Spanish normal school for men teachers in Manila, 1865–1905, 123.
Callinesia fimbriolata Melichar, *178*.
philippina Melichar, 178.
Callionymidæ, 79.
Callionymus curvicornis Cuv. and Val., 79.
hindsii Richardson, 79.
Calliscelio philippinensis Kieffer, 286.
Callyodon dubius Bennett, 70.
limbatus (Richardson), 70.
Camma Distant, *434*.
dilatata Distant, *434*.
Camphora officinalis, *254*.
Camptoteleia Kieffer, 296.
carinata Kieffer, *286*, 296.
cupularis Kieffer, 296, 298.
excavata Kieffer, *286*, 296.
flavipennis Kieffer, 296, 297.
magna Kieffer, 296.
Cañao, 472.
planting and harvesting, 525.
Cañaos, descriptions of various kinds of, 489, 513.
Carangidæ, 62.
Caranx boops Cuv. and Val., 62.
calla Cuv. and Val., 62.
djeddaba (Forskål), 62.
malabaricus (Bloch and Sch.), 62.
ophthalmotænia (Bleeker), 62.
Caranx, young of, living in medusæ, 221, 230.
Cardinal fishes, 63.
Cardiophorus **bakeri** Fleut., 446.
elegans Candèze, *446*.
Carp, 60.
Carybdea alata Reynaud. var. moseri Mayer, 196.
rastonii Haacke, 196.

Cassiopea **medusa** Light, *195*, 197, 204.
ornata Haeckel, 197.
polypoides Keller (?), *195*, 197, 203.
var. **culionensis** Light, *195*, 197, 201.
xamachana, *206*.
Catfish, smoked, 9.
Catfishes, 60.
Catostylus purpurus Mayer, *195*, 197, 207.
Cavalla, 7, 62.
Cayen, barrios of, 509.
customs of people in, 510.
Centrophthalmus clavatus Raffray, *454*.
philippinensis Raffray, 454.
Cephalacanthidæ, 78.
Cephalacanthus orientalis Cuv. and Val., 78.
Cephalopholis bœnack (Bloch), 65.
Cephea cephea (Forskål) Mayer, *195*, 197, 206.
octostyla L. Agassiz, 197.
Cepolidæ, 69.
Ceraphron manilæ Ashmead, 287.
Ceraphronidæ, *287*.
Ceratopsilus rufipes Kieffer, 286.
Cercocephala **bakeri** Crawford, 460.
(Chætospila) elegans Westwood, *461*.
Cervantes, barrios of, 512.
Chætodon aureus Günther, *71*.
aureus Temm. and Schleg., *71*.
bella-maris Seale, 72.
collaris Bloch, *71*, 72.
collaris Day, *72*.
collaris Günther, *72*.
collaris Jordan and Fowler, *71*.
desmotes Jordan and Fowler, *72*.
fasciatus Bleeker, *73*.
lunula Lacépède, *73*.
modestus Temm. and Schleg., 72.
prætextatus Cantor, *71*.
rafflesii Bennett, *72*.
reticulatus Cuv. and Val., *71*, *72*.
Chætodontidæ, 71.
Chalcididæ, 457.
Chal yu, 61.
Charibdis (Gonionemus) crucifera (Fabr.) M. Edwards, *230*.
Charybdea philippina Haeckel, *196*.
Chiropsalmus quadrigatus Haeckel, *195*, 196, 197, 199.
Chick yu, 60.
Chi yu, 62.
Chlorepyris flavipennis Kieffer, 285.
Chœrops ommopterus Richardson, 70.
Chrestoteleia bakeri Kieffer, 286.
CHRISTIE, EMERSON B., Notes on irrigation and coöperative irrigation societies in Ilocos Norte, 99; Notes on the pottery industry in San Nicolas, Ilocos Norte, 117.
"Chrysaora stage" of Dactylometra quinquecirrha, 195, 196.
Chrysobothris bistripunctata H. Deyr., 84.
Chrysodema adjuncta Saund., 83.
eximia Cast. et Gory, 83.
Cinetus **maquilingensis** Kieffer, 311.
Cinnamomeum, *254*.
Cirrhitidæ, 69.
Cirrhitities aureus (Temm. and Schleg.), 69.
oxycephalus Bleeker, *69*.
Citrus nobilis Lour., *251*.
Cixiinæ, 174, 269.
Cleistepyris minimus Kieffer, 285.
minor Kieffer, 285.
philippinensis Kieffer, 285.
Clothes, material used by Igorots, 525.
Cocculus thunbergii DC., *256*.
Cologlyptus kiefferi Crawford, 287.
Complaints, Igorot manner of settling, 525.
Concepcion, barrios of, 515.
people of, their customs and life, 515.
Concubinage among Igorots, 516.
Copper, discovery of, by Igorots, 519.
Cornet fishes, 62.
Corvina catalea Richardson, *68*.
Corymbites, *448*.
Cosmodesmus Haase, 252.
Cothonaspis (Hexaplasta) **minima** Kieffer, 184.
COWLES, R. P., Palaemons of the Philippine Islands, 319.
Crabs, salted, 4.
Crambione, *211*.
CRAWFORD, J. C., New Philippine Hymenoptera, 457.
Croakers, 68.
Crocodile, nesting of, 313.
Crocodilus palustris Lesson, notes on a nesting place of, 313.
porosus Schneid., 315.
Crustacean, flying, in the Philippine Islands, 57.
Crustaceans of the genus Palaemon, 319.
Cryptarcha bakeri Grouvelle, 541.
Cryptocentrus filifer (Cuv. and Val.), 76.
venustus Seale, 76.
Cryptodactylus philippinensis Saund., 84.
Ctenophores, *196*.
Cynanchum caudatum Maxim., *256*.
Cynipides, nouveaux, des Philippines, 183.
Cynoglossus abreviatus Gray, 78.
melanopterus Richardson, 78.
Cyprinidæ, 60.
Cyprinoid fishes of the genus Barbus, from Lake Manguao, Palawan, 187.
Cyprinus carpio (Linn.), 60.
Cypsilurus simus (Cuv. and Val.), 60.

D

Dacnotillus simoni Raffray, 455.
Dactylometra quinquecirrha L. Agassiz, *195*, 196, 198, *221*.
Dala, used in catching crustaceans, 320.
Dalchina teredon Felder, *253*.
DAY, ARTEMAS L., The osseous system of Ophiocephalus striatus Bloch, 19; Two new cyprinoid fishes of the genus Barbus from Lake Manguao, Palawan, P. I., 187.
Dead, cañao for the, 524.
Death among Igorots, customs at, 508.
Debis diana Butler, *261*.
sicelis Hewitson, *260*.
Delphacinæ, 273.

Dendrokara Melichar, 272.
monstrosa Melichar, 272.
torva Melichar, 273.
Derbinæ, 269.
Diapriidæ, 287, 301.
Dicercomorpha argenteoguttata Thoms., 83.
Dicronychus **bakeri** Fleut., 449.
cinnamomeus Candèze, *449*.
Digalesus Keiffer, 303.
flavipes Kieffer, 303.
Dilapitha Keiffer, 293.
albipes Kieffer, 293.
nitida Kieffer, 294.
Diploconus **bakewellii** Fleut., 447.
erythronotus Candèze, 447.
obscurus Fleut., 447, *448*.
philippinnensis Fleut., 447.
politus Candèze, 447.
umbilicatus Candèze, 446, *447*.
Diploprion bifasciatum (Kuhl and Van Hasselt), 66.
Discomedusa philippina Mayer, 197.
Dissomphalus tibialis Ashmead, 285.
Dragonels, 79.
Drasterius sulcatulus Candèze, 442.
Drepana punctata Günther, *71*.
Drepane punctata (Gmelin), 71.
Drepanidæ, 71.
Dryinidæ, 285.
Dryinus, 285.
Dussumiera acuta Cuv. and Val., *11*.
elopsoides Bleeker, *11*.
hasseltii Bleeker, *11*.
Duymæria aurigaria Günther, *69*.
flagellifera Cuv. and Val., 69.
flagellifera Jordan and Snyder, *69*.
Dystheatias **fuscovenosa** Melichar, 174.
punctata Melichar, 174.

E

Eels, smoked, 9.
Elasmidæ, 461.
Elasmus **ashmeadi** Crawford, 462.
elegans Crawford, 461.
lutens Crawford, 461
philippinensis Ashmead, *461*.
Elateridæ des îles Philippines, 441.
Eleotridæ, 74.
Eleotrids, 74.
Endelus **bakeri** Kerremans, 88.
Engraulidæ, *11*, 59.
Engraulis russellii Günther, *59*.
Entedon **magnus** Crawford, 462, *463*.
manilensis Crawford, 463.
Enumération des Serphides (Proctrotrupides) des îles Philippines, avec description de genres nouveaux et d'espèces nouvelles, 285.
Ephippidæ, 71.
Ephippus orbis (Bloch), 71.
Epidelus wallacei Thoms., 83.
Epierus **nasicornis** Bickh., 429.
Epinephelus boenack (Bloch), 65.
dermopterus (T. and S.), 65.
gilberti Richardson, 66.
merra Bloch, 65.
moara (Schlegel), 65.
septemfasciatus Thumb., 65.
Epyris Westwood, 288.
apertus Kieffer, 285.
filiformis Kieffer, 288.
philippinensis Kieffer, 285.
Equula insidiator (Bloch), 63.
ruconia (Hamilton-Buchanan), 63.
Equulidæ, 63.
Eucœlidea **maquilingensis** Kieffer, 184.
Eulophidæ, 462.
Eupilis **hyalinocosta** Melichar, 279.
nigrinervis Stål, *278*.
rubrovenosa Melichar, 278.
Euplectrus **bussyi** Crawford, *464*.
flavescens Crawford, 463.
rugosus Crawford, 464.
Euplectus crassipes Raffray, *451*.
Eurynomeus Kirk., *176*.
Exoccœtidæ, 600.

F

Fa paw poong, 60.
Fenuahala **maculipennis** Melichar, 436.
Filefishes, 73.
Fish, and fishery products, preservation in the tropics, 1.
drying, 1.
marinated, 9.
pickling, 2.
preparing for shipment, 14.
preserving by smoking, 5.
refrigeration of, 12.
salting, 1.
Fishes, clupeoid, in Philippine waters, 11.
of Hongkong, 59.
Fistularia serrata Cuv., 62.
Fistulariidæ, 62.
Flatheads, 77.
FLEUTIAUX, ED., Elateridæ des îles Philippines, 441.
Flying crustacean, 57.
fishes, 60.
gurnards, 78.
Foenobethylus gracilis Kieffer, 285.
Fosforo, 199.
Fulgoriden, neue, 433.
von den Philippinen, 269.

G

Galesus Curtis, *303*, 306.
clavaticornis Kieffer, 287, 306.
crawfordi Kieffer, 287, 306.
curticeps Kieffer, 287, 306.
luzonicus Ashmead, 287, 306.
manilæ Ashmead, 287, 306.
philippinensis Kieffer, 306.
(Schizogalesus) **lineatus** Kieffer, 306.
Garfishes, 60.
Garoupa, 65.
Geijera salicifolia, 254.
Gerridæ, 67.
Glossogobius giuris (Hamilton-Buchanan), 75.
Glyphonyx erraticus Candèze, 449.
var. attonitus Candèze, *449*.
posticus (?) Candèze, 449.
Gobies, 74.

Gobiichthys tentacularis (Cuv. and Val.), 76.
Gobiidæ, 74.
Gobius pectinirostris Gmelin, *74*.
pœcililichthys Jordan and Snyder, 75.
Gold, discovery of, by Igorots, 520.
Goniozus Foerster, 288.
depressus Kieffer, 285, 288.
philippinensis Ashmead, 285, 288.
triangulifer Kieffer, 288.
GROUVELLE, A., Nitidulidæ des Philippines recoltés par C. F. Baker, 535.
Grunts, 66.

II

Habroteleia browni Crawford, 286.
Hadronotus flavipes Ashmead, 286.
philippinensis Ashmead, 286.
Hæmulidæ, 67.
Hak chong, 63.
Halfbeak, 60.
Halichœres dussumieri (Cuv. and Val.), 70.
javanicus Bleeker, 70.
nigrescens Bleeker, *70*.
pœcilopterus (Schlegel), 70.
Haptoneus latior Grouvelle, 538.
lotrolus Er., 539.
Harima Moore, 263.
Harvesting, cañao for, 525.
Hemigalesus Kieffer, 304.
auriculatus Kieffer, 304, *306*.
brevicornis Kieffer, 287, 304.
dentatus Kieffer, 304, 305.
gracilis Kieffer, 287, 304.
longirostrum Kieffer, 304, 305.
niger Kieffer, 287, 304.
rufus Kieffer, 287, 304.
Hemiops semperi Candèze, 449.
Hemiramphus cantoris Bleeker, 60.
Hemisphaerius affinis Melichar, 279.
chlorophanus Melichar, *279*.
rufus Melichar, 280.
triangularis Melichar, 279.
Herring, 6.
kippered, 8.
smoked, 8.
Heteroderes, *441*.
drasterioides Fleutiaux, 442.
intermedius Candèze, *442*.
proximus Fleutiaux, *442*.
triangularis Esch., *442*.
Hih pe yang, 73.
Hikage-cho, 260.
Hime-janome, 264.
Hime-kimadara-kikage, 263.
Hister (Antholus) bakeri Bickh., 428.
Histeriden, Philippinische, 423.
History of the Spanish normal school for men teachers in Manila, 1865–1905, 123.
Holocentridæ, 62.
Holocentrus ruber Lacépède, 62.
Hololepta elongata Erichson, 423.
Homopteren von den Philippinen, 173.
Hongkong, fishes of, 59.
Hoplogryon flaviclava Kieffer, 286.
longispina Kieffer, 286.
roberti Crawford, 286.
striaticeps Crawford, 286.
Hoploteleia Ashmead, 292.
carinata Kieffer, 286, 292.
pacifica Ashmead, 286.
philippinensis Kieffer, 286.
unidens Kieffer, 286.
Houses, Igorot method of building, 517.
Hymenoptera, new Philippine, 457.
Hypnoidus bakeri Fleutiaux, 446.

I

Igorots, Christians and, enmity between, 502.
custom of dressing, 485.
customs of, 494.
discovery of copper by, 519.
gold by, 520.
Lepanto, 465.
manner of settling complaints, 525.
working, 488.
marrying customs, 487, 523.
materials used for clothes by, 525.
superstitions of, 486, 526.
thieves among, 516.
Ikema, 256.
Ikisha hœvenii (Bleeker), *11*.
Ilocos Norte, irrigation and coöperative irrigation societies in, 99.
the pottery industry in San Nicolas, 117.
Imperata arundinacea Cyr., *260*.
Indian spadefishes, 71.
Intempus punctatissimus Reitter, 451.
Inu-gusu, 255.
Inu-zanshō, 250.
Irrigation and coöperative irrigation societies in Ilocos Norte, 99.

J

Jako-ageha, 255.
Japanese Lepidoptera and their larvæ, notes on, 247.
Jassoidea, studies in Philippine, 409.
Jelly-fish, poisoning by, 199.
Julis exornatus Richardson, *70*.

K

Kaga-imo, 256.
Kai kung yu, 70.
Karatachi, 250.
Kasserota, *281*.
Kaya, 260.
KERREMANS, CH., Buprestides recueillis aux îles Philippines par C. F. Baker; I, 88.
KIEFFER, J. J., Nouveaux Cynipides des Philippines, 188; Enumération des Serphides (Proctotrupides) des îles Philippines avec description de genres nouveaux et d'espèces nouvelles, 285.
Kimakara-hikage, 258.
Kirbyana Melichar, *174*.
Kirrodesa Moore, 260.
Kiwada, 250.
Kolla Distant, 419.

Kuro-hikage, 261.
Kuro-hikage-modoki, 262.
Kuro-taimai, 252.

L

Labridæ, 69.
Lacon cervinus Erichson, 441.
Lamenia **flavescens** Melichar, 179.
Langosta del mar, 324.
Lapithasa Malichar, 281.
bakeri Malichar, 281.
Lap yu, 66.
Larvæ of Japanese lepidoptera, 247.
Lasiommata epimenides Mén., *264*.
gaschkevitschii Felder, *259*.
goschkevitschii Mén., *259*.
maacki Bremer, *262*.
Lauraceæ, *253*.
Laurus camphora, *253*.
Legislation relating to Mountain Province, 466.
Leiognathus daura (Cuvier), 63.
edwardsi Evermann and Seale, 63.
virgatus Fowler, 63.
Lemnalia Gray, *234*, 242.
africana May, *236*.
armatum Kukenthal, 236.
brassica May, *236*.
elegans May, *236*.
flava May, *236*.
Lemnalioides kükenthali Light, 233.
Lepanto, general history of, 470.
Igorots of, 465, 471.
people of, 467.
subprovince, manuscrips from, 466.
Lepidoptera and their larvæ, notes on Japanese, 247.
Leptaleocera **bakeri** Melichar, 271.
Lestodryinus browni Ashmead, 285.
luzonicus Kieffer, 285.
perkinsi Kieffer, 285.
Lethe Hübner, 260, *263*.
callipteris Butler, 264.
celeja Fruhst., *262*.
consanguis Butler, *261*, *262*.
diana Butler, *262*.
fixseni Butler, *262*.
(Harima) callipteris Butler, 263.
(Kirrodesa) sicelis Hewitson, 260.
labyrinthea Leech, 264.
(Rangbia) diana Butler, 261.
sicelis Pryer, *260*.
var. vanelia Fruhst., *261*.
(Tansima) marginalis Motschulsky, 262.
whitelyi Butler, *261*, 262.
Lethrinus mahsenoides Ehrenberg, 67.
Leucospis **bakeri** Crawford, 457.
pulchellus Crawford, 457.
LIGHT, S. F., Some Philippine Scyphomedusæ, including two new genera, five new species, and one new variety, 195; Notes on Philippine Alcyonaria, Part II: Lemnalioides kükenthali, a new genus and species of Alcyonaria from the Philippines and a discussion of the systematic position of the new genus, 233.
Linuche aquila (Haeckel) Mayer, 196.
Liopteninæ, 185.
Liopygus diopsipygus Marseul, 426.
Lipoglyptus primus Crawford, *287*.
Lithophytum africanum, *239*.
arboreoum (Q. and G.), *237*.
armatum Kükenthal, *236*.
brassica Kükenthal, *236*.
carnosum (Kükth.), *239*.
elegans Kükenthal, *236*.
flavum, *239*.
Litsaea, *254*.
Li yo, 60.
Lizard fishes, 59.
Lobonema Meyer, 216.
mayeri Light, *195*, 197, 217, *221*, 230.
smithii Mayer, 197, 199, *219*, *221*.
Lobonemoides gracilis Light, *195*, 197, 222.
Loboscelidia rufescens Westwood, 287.
?Lophatherum elatum Zoll., *259*, *260*, *261*, *263*.
Lorifera flagellata (Haeckel) Mayer, 197.
Loxotropa philippinensis Kieffer, 287.
Ludius hirsutus Candèze, 448.
Lutianidæ, 66.
Lutianus annularis (Cuv. and Val.), 66.
erythropterus Bloch, 66.
erythropterus Day, *66*.
monostigma (Cuv. and Val.), 66.
Lychnorhyza, *212*.
bartschi Mayer, 197.

M

Mababili barrio, story of, 478.
Machilus japonica S. and Z., *255*.
odoratissima, 254.
thunburgii S. and Z., 253, *254*.
Mackerel family, *11*.
Mackerels, 62.
Macroteleia Westwood, 298.
cavifrons Kieffer, 298, 299.
crawfordi Kieffer, *286*, 298.
flaviceps Kieffer, 300.
kiefferi Brues, *286*.
kiefferi Crawford, *286*, 289.
manilensis Ashmead, *286*, 298.
philippinensis Kieffer, *286*, 298.
striativentris Crawford, *286*, 298.
superans Kieffer, 298, 299.
Majella majella Kirk., *178*.
philippina Melichar, 177.
Makilingia Baker, 409.
colorata Baker, 411, 413.
maculata Baker, 411, 412.
nigra Baker, 410, 411.
pallida Baker, 411, 414.
pruinosa Baker, 410, 412.
Malaria mosquito, a new species, 405.
Malay pangolin, Manis javanica Desmarest, notes on the, 93.
Malaxa Melichar, 275.
acutipennis Melichar, 275.
Malideg barrio, customs of, 475.
Mancayan, barrios of, 517.
Manis javanica Desmarest, notes on, 93.

Marriage customs of Igorots, 508, 523.
Mastigias ocellata Haeckel, 197.
papua L. Agassiz, *195*, 197, 209.
var. sibogæ Maas, *208*.
McGREGOR, RICHARD C., Description of a new species of Prinochilus from the highlands of Luzon, 581.
Mecynorhynchus **hyalinus** Melichar, 437.
kershawi Kirk., *437*.
Medusæ, *196*.
Megapenthes angulosus Candèze, 442.
fulvus Fleut., 443.
inconditus Candèze, 442.
junceus Candèze, 442, *443*.
var. candezei, 442.
luzonicus Fleut., 442.
Megatropis **interruptolineata** Melichar, 271.
obliquefasciata Melichar, 271.
Melanotus ebeninus Candèze, 448.
scribanus Candèze, 448.
Melanoxanthus **affinis** Fleutiaux, 444.
ater Fleut., 445.
bakeri Fleut., 443.
bicolor Candèze, *444*.
carbunculus Candèze, *445*.
cruciellus Candèze, *445*.
crucifer Fleutiaux, 445.
exclamationis Candèze, *444*.
infimus Candèze, 445.
luzonicus Fleutiaux, 444.
promecus Candèze, 443.
sanguinicollis Schw., *444*.
Melibæus **æneifrons** H. Deyr., 84.
bakeri Kerremans, 84.
MELICHAR, L., Neue Homopteren von den Philippinen, 173; Neue Fulgoriden von den Philippinen: I. Theil, 269; Neue Fulgoriden von den Philippinen: II, 433.
Meristhus nigritulus Candèze, 441.
Microcanthus strigatus (Cuv. and Val.), 73.
Mikan, 251.
Mileewa Distant, 415.
gillavryi, *417*.
luzonica Baker, 415, *417*.
var. **decolorata** Baker, 416.
Miscanthus sinensis Anders., *262*.
Misepyris exaratus Kieffer, 285.
longiceps Kieffer, 285.
Mojarras, 67.
Monacanthidæ, 73.
Monacanthus chinensis (Bloch), 73.
chinensis Günther, *73*.
lineolatus Richardson, 74.
setifer Bennett, 73.
setifer Günther, *73*.
Months, Igorot names for, 495.
Mosquito, malaria, a new species, 405.
Mountain Province, evolution of, 466.
legislation relating to, 466.
Mugil cephalus Linn., 61.
longimanus Günther, 61.
macolipidotus Richardson, *61*.
oeur Forskål, 61.
planiceps Cuv. and Val., 61.
Mugilidæ, 61.
Mullet roes, 4.
Mullets, 7, 61.
Mullidæ, 67.
Murder of a young boy, Igorot account of, 503.
Mycalesis Hübner, 264.
borealis Feld. and Rogen., *265*, *266*.
charaka Moore, *266*.
fulginia Fruhst., *266*.
gotama Moore, *264*, *265*.
madjicosa Butler, *266*.
nanda Fruhst., *266*.
oculata Moore, *266*.
(Sadarga) gotama Moore, 264.
seriphus Fruhst., *266*.
Myzomyia **febrifera** Banks, 405.
funesta Giles, *405*.
rossii Giles, *405*.

N

Naked catfishes, 60.
Nemipterus japonicus (Bloch), 66.
Neocamma Melichar, 434.
trifasciata Melichar, 435.
Neope Butler, 258.
callipteris Butler, *263*.
goschkevitschii Ménétries, 258.
japonica Butl., *259*.
niphonica Butl., *259*.
watanabei Mats., *259*.
Nephthyidæ, *236*, 239.
Nesting place of Crocodilus palustris Lesson, notes on, 313.
Neue Fulgoriden von den Philippinen: I. Theil, 269; II, 433.
Neurepyris tagala Ashmead, 285.
Neurocacus philippinensis Kieffer, 286.
Neuroteleia Kieffer, *293*.
Nitidulidæ des Philippines, 535.
Normal school for men teachers in Manila, history of, 123.
Nysia **alba** Melichar, 178.
atrovenosa Leth., *178*.

O

Ophiocephalus striatus Bloch, the osseous system of, 19.
Opisthacantha nigriclavata Ashmead, 286.
Origin of the world, Igorot legend of, 523.
Orthopagus (Udugama, Anagnia) **philippinus** Melichar, 173.
Osseous system of Ophiocephalus striatus Bloch, 19.
Oxyurichthus **amaballs** Seale, 76.
cristatus (Day), 75.

P

Padangaan barrio, 505.
Pak chong, 63.
Palaemon acanthurus Wiegmann, *356*.
carcinus Fabricius, *322*, 324, *347*, *349*, *350*, *351*.
dispar von Martens, *348*, *366*.
elegans de Man, *341*, *371*, *379*.
esculentus Thallwitz, *397*.
grandimanus Randall, *385*, *392*.
hilgendorfi H. Courtière, *385*, *388*.

Palaemon idae Heller, *365.*
jamaicensis, *339.*
jaroensis Cowles, 385.
lanceifrons Dana 364, *371, 379.*
var. montalbanensis Cowles, 371.
lar Fabricius, *339,* 380.
latidactylus Thallwitz, 392, *400.*
lepidactylus Hilgendorf, *335, 388,* 389, *395, 400.*
nipponensis de Haan, *341, 346, 351.*
oenone de Man, *397, 398.*
philippinensis Cowles, *330, 339,* 340.
placidus de Man, *385, 388.*
ritsemae de Man, *341, 352.*
rosenbergii de Man, *325.*
rudis Heller, *341.*
sp., 397.
sundaicus Heller, 355, *365.*
weberi de Man, *341, 343.*
Palaemons of the Philippine Islands, 319.
Palinurus, 324.
Pan us, 78.
Pangolin, Malay, Manis javanica Desmarest, 93.
Papilio Doubleday, 250.
agamemnon, *254.*
alcinous Klug, *255, 257.*
var. mansonensis Fruhst., *258.*
bianor Cramer, *251.*
bradanus Fruhst., *257.*
colus Fruhst., *255.*
confusus Rothsch., *257.*
connectens Fruhst., *255.*
(Cosmodesmus) sarpedon Linnæus, 252.
dæmonius Alphér, *257.*
decora Oberth., *257.*
demetrius Cramer, *251.*
demophon Meerb., *255.*
demophoon Shaw, *255.*
eurypilus Linn., *253.*
fatuus Rothsch., *257.*
febanus Fruhst., *258.*
hæmatostictus Butl., *257.*
hagus Fruhst., *255.*
helenus Linn., *251.*
impedens Rothsch., *257.*
intermedia Oberth., *257.*
koannania, *253.*
loochooanus Rothsch., *257.*
luctatius Fruhst., *255.*
mansonensis Fruhst., *257.*
mencius Feld., *257.*
morius Fruhst., *255.*
nagasakii Fruhst., *257.*
nipponus Fruhst., *253, 255.*
(Pharmacophagus) alcinous Klug., 255.
plutonius Oberth., *257.*
sarpedon Davidson and Aitken, *253.*
sarpedon Linnæus, *252, 255.*
sarpedonides Fruhst., *253 255.*
semifasciatus Honr., *255.*
spathatus Butl., *257.*
teredon Feld., *254.*
Papilio xanthus Linn., *250.*
xuthulus Brem., *250.*
xuthus Linnæus, 250.
Papilionidæ, 250.
Paralemnalia, *236, 242.*
eburnea Küken., *237.*
flabellum Q. and G., *237.*
thrysoides (Ehrbg.), *236, 237.*
Paramesius Westwood, 301.
luzonicus Kieffer, 301.
Parapercis cylindrica (Bloch), 79.
pulchella (Temm. and Schleg.), 79.
Paratangia, *178.*
Pareniaca bakeri Crawford, 459.
browni Crawford, 458.
Paromatus sp., 429.
Parrot fishes, 70.
Payeo, barrio, origin and life of first man and woman inhabiting, 502.
Pelagia panopyra Péron and Lesueur var. placenta (Haeckel) Mayer, 196.
Pelagidæ, *196.*
Penaeus, *319,* 324.
Percis sexfasciatus Temm. and Schleg., 79.
Perilampidæ, 459.
Perilampus luzonensis Crawford, 459.
punctiventris Crawford, 460.
Periphylla hyacinthina Steenstrup forma dodecabostrycha (Haeckel) Mayer, 196.
Pharmocophagus Haase, *255.*
Phellodendron amurense, *250.*
Philanthaxia lata Kerremans, 83.
Philippine Scyphomedusæ, including two new genera, five new species, and one new variety, 195.
Phœnopria exilis Kieffer, 287.
nigriceps Kieffer, 287.
rufa Kieffer, 287.
Phyllorhiza, *212.*
Pistol crab, 324.
Plaice, 78.
Planting and harvesting, cañao for, 525.
Platycephalidæ, 77.
Platycephalus insidiator (Forskål), 77.
Platygasteridæ, *286.*
Platylister birmanum Mars., *425.*
contiguum Mars., *425.*
emptum Mars., *425.*
jobiense Mars., *425.*
pini Lew., *425.*
sesquistriatum Mars., *425.*
Platyscelio abnormis Crawford, 286.
punctatus Kieffer, 286.
Platysoma abruptum Erichson, *425.*
(Cylistosoma) dufali Marseul, 426.
dufali Marseul, *426.*
gorhami Lewis, *425.*
luzonicum Erichson, 425.
ovatus Erichson, *425.*
(Platylister) abruptum Erichson, 425.
charrali Marseul, 424.
corticinus Bickhardt, 424.
ovatum Erichson, 425.

Platysoma (Platylister) striatiderum Marseul, 425.
ramoicola Mars., *425*.
scitutum Lewis, *426*.
striatiderum Marseul, *425*.
uniforme Lewis, 426.
Pleuronectidæ, 78.
Plotosidæ, 60.
Plotosus arab (Forskål), 60.
Pochazia marginalis Melichar, 179.
Pochazina bakeri Melichar, 180.
handlirschi Mel., *180*.
Poisoning by jellyfish, 199.
Polydactylus plebeius (Broussonet), 62.
tetradactylus Shaw, 61.
Polynemidæ, 61.
Pomfret, black, 63.
white, 63.
Porgies, 7, 67.
Pottery industry in San Nicolas. Ilocos Norte, notes on the, 117.
Prawns, salted, 3.
Prionochilus anthonyi McGregor, 531.
Priopis urotænia (Bleeker), 65.
Pristapoma hasta Bloch, 67.
Procinetus rectinervis Kieffer, 287.
Proctotrupides, 285.
Prodryinus (?) stantoni Ashmead, 285.
Promiomœra rufithorax Kieffer, 183.
Prosacantha, *286*.
Prosparasion coeruleum Kieffer, 286.
Protective coloration, 248.
Psélaphides des îles Philippines, 451.
Pseudorhiza, *212*.
Pseudorhombus misakius Jordan and Starks, 78.
olegolepis Bleeker, 78.
russellii (Gray), 78.
Pseudoscarus æruginosa Günther, *70*.
Pteromalidæ, 460.
Pteropsaridæ, 79.
Pterosparids, 79.
Ptoleria Stål, 175.
Puffers, 74.
Pukot, used in catching crustaceans, 320.

Q

Quarrels of husband and wife among Igorots, 516.
Questions and complaints, Igorot methods of settling, 511.

R

RAFFRAY, A. Catalogue des Psélaphides (Coléoptères) des îles Philippines, 451.
Rangbia Moore, 261.
Raphitreus bakeri Raffray, 455.
dentimanus Raffr., *455*.
speratus Sharp, *455*.
Refrigeration of fish, 12.
Reichenbachia dama Raffray, 454.
laticollis Raffray, 453.
manillensis Raffray, 453.
rufa Schmidt-Gœbel, 453.
Rhabdepyris luzonicus Kieffer, 285.
Rhizostomæ, *196*, 201.
Rhizostomata dichotoma. 206.
pinnata, 201.
triptera, *216*.
Rhinogobius hongkongensis Seale, 74.
Rhopalocera, 250.
Rhopilema esculenta Kish., *230*.
hispidum Maas, *230*.
visayana Light, *195*, 197, 227, 230.
Rhotana basipunctulata Melichar, 438.
excelsa Melichar, 437.
latipennis Walk., *437*.
punctovenosa Melichar, 437.
Ricaniinæ, 179.
ROBERTSON, JAMES A., The Igorots of Lepanto, 465.
Rybaxis gladiator Rraffray, 454.
simoniana Raffray, 454.

S

Sabangan, barrios of, 522.
Sadarga Moore, 264.
Salt water shrimps, *319*, 324.
Sambus auricolor Saund., 84.
lugubris Saund., 84.
Sanderia malayensis Goette, 196.
San Emilio, barrios of, 526.
Santalus congruens Mars., 427.
elongatulus Mars., *427*.
latitibius Mars., 427.
mandibularis Schmidt, 427.
parallelus Redt., 427.
philippinarum Bickhardt, 426, 428.
piraticus Lewis, *426*.
rupestris Mars., 428.
tabellio Mars., 428.
Sardinella fimbrata (Cuv. and Val.), *11*.
gibbosa (Bleeker), *11*.
klunzi (Bleeker), *11*.
longiceps (Cuv. and Val.), *11*.
melanostica (Schleg.), *11*.
moluccensis (Bleeker), *11*.
sundaica (Bleeker), *11*.
vancibris (Jordan and Snyder), *11*.
zunazi (Bleeker), *11*.
Sardines, 6.
canning, 10.
Sasagusa, 259, 260, 261, 263.
Satyridæ, 258.
Satyrus marginalis Motschulsky, *262*.
Scapopria atriceps Kieffer, 284, 310.
Scarichthyidæ, 70.
Scelio Latreille, 289.
aratigena Kieffer, 286, *590*.
bisectus Kieffer, 290.
consobrinus Kieffer, 286, *290*.
luzonicus Kieffer, *290*, 291.
philippinensis Ashmead, 286, *289*.
variicornis Kieffer, 286, *290*.
Scelionidæ, 286, 289.
Schizosema cellularis Kieffer, 183.
SCHULTZE, W., Notes on the Malay pangalin, Manis javanica Desmarest, 93; Notes on a nesting place of Crocodilus palustris Lesson, 313.
Sciæna aneus Bloch, 69.
diacanthus (Lacépède), 68.

Sciænidæ, 68.
Sciænoides biauritus Cantor, 69.
Scolopsis vosmeri Bleeker, 66.
Scomberoides lysan (Forskål), 62.
Scomberomorus guttatum (Bloch), 62.
Scombridæ, 62.
Scorpænidæ, 77.
Scorpion fishes, 77.
Scyphomedusæ, some Philippine, 195.
Sea bass, 7.
crawfish, 324.
goldfishes, 69.
SEALE, ALVIN, Preservation of commercial fish and fishery products in the tropics, 1; Fishes of Hongkong, 59.
Sebastopsis marmorata (Cuv. and Val.), 77.
Sek pan, 65.
Semæostomeæ, 200.
Serphides, 285.
Serranidæ, 65.
Shiro-gusu, 255.
Shrimps, salted, 3.
Sick, cañao for, 524.
Sickness, Igorot customs during, 510.
Siganidæ, 73.
Siganids, 73.
Siganus oramin (Bloch and Schn.), 73.
Sillaginidæ, 69.
Sillago maculata Quoy and Gaimard, 69.
sihama (Forskål), 69.
Siluridæ, 60.
Silversides, 60.
Sinchula Moore, *263*.
Slip months, 63.
Snappers, 7, 66.
Soldier fishes, 62.
Solea ovata Richardson, 78.
Soleidæ, 78.
Soles, 78.
Soles faleacea Richardson, *78*.
Spadefishes, 71.
Spanish normal school for men teachers in Manila, 1865–1905, history of, 123.
Sparasion philippinense Kieffer, 286.
Sparidæ, 67.
Sparus berda Forskål, 67.
datnia (Hamilton), 67.
Spheroides spadiceus (Richardson), 74.
Sphyræna jello Cuv. and Val., 61.
obtusata Cuv. and Val., 61.
Sphyrænidæ, 61.
Spilomicrus Westwood, 302.
carinifrons Kieffer, 287, 302.
consobrinus Kieffer, 287.
dispansus Kieffer, 287, 302.
nitidicornis Kieffer, 287, 302.
opertus Kieffer, 287, 302.
philippinensis Kieffer, 302.
vaiicornis Kieffer, 287, 302.
Spiny lobster, 324.
Stethojulis kalosoma Bleeker, 70.
Striped mullet, 61.
Stolephorus delicatulus (Bennet), *11*.
gracilis (Temm. and Schleg.), *11*.
Stromateidæ, 63.
Stromateus argenteus Bloch, 63.
niger Bloch, 63.
Stylopria Kieffer, 307.
rufa Kieffer, 307.
Suagayan barrio, customs of, 480.
Superstitions of Igorots, 526.
Surmullets, 67.
Susuki, 262.
Symplana Kirby, 277.
viridinervis Kirby, 278.
Synaptura orientalis Bloch and Schneider, 78.
pan Bleeker, *78*.
Synodontidæ, 59.
Synodus japonicus (Houttuyn), 59.
Syntames tubulifer Melichar, 269.

T

Tabu-no-ki, 253, 255.
Talabog, used in catching crustaceans, 320.
Tangina bipunctata Melichar, *176*.
quadrilineata Melichar, 177
quadripunctulata Melichar, 176.
Telenomus catacanthæ Ashmead, 286.
Tephritis sinensis (Lacépède), 78.
Termites, nests of, 94.
Tetraodontidæ, 74.
Tettigoniella Jacobi, 418.
differentialis Baker, 420.
kinbergi, *420*.
makilingensis Baker, 419.
quinquenotata Stål, *420*.
spectra var. nigrilinea Stål, 418.
unimaculata Sign., *420*.
whiteheadii Distant, 418.
Tettigoniellidæ, new species of, 409.
Thalassoma lunare (Linn.), 69.
Therapon cuvieri (Bleeker), 66.
jarbua (Forskål), 67.
theraps (Cuv. and Val.), 67.
Theraponidæ, 66.
Thesiastes crassipes Raffray, 451.
Thieves, Igorot, 516.
Threadfins, 61.
Thysanophrys bataviensis (Bleeker), 78.
neglectus (Troch.), 78.
Thysanostoma thysanura Haeckel, 197.
Tmesiphorus simoni Raffray, *455*.
Torreya nucifera S. and Z., *260*.
Trachinocephalus myops (Forster), 59.
Trachurus trachurus Linn., 62.
Trachys bakeri Kerremans, 90.
cornuta Kerremans, 89.
dubia Saund., 89.
formosana Kerremans, 90.
Trichopria Ashmead, 310.
analis Kieffer, 287, 310.
caudata Kieffer, 287, 310.
insulæ Kieffer, 287.
maquilingensis Kieffer, 310.
semirufa Kieffer, 287, 310.
Tridentiger bifasciatus Steindachner, 77.
Tristilophus luzonicus Candèze, 448.
Tropidocephala philippina Melichar, 273.
Trypauchen vagina Bloch and Schn., 77.
Tsubana, 260.

Tsuzura-fuji, 256.
Two new cyprinoid fishes of the genus Barbus from Lake Manguao, Palawan, P. I., 187.
Tylosurus caudimaculatus (Cuvier), 60.
Tyraphus baeri Raffray, 454.

U

Ugyops **granulatus** Melichar, 175.
Ujna Stål, 416.
consors Distant, *417*.
delicatula Distant, *417*.
philippinensis Baker, 416, *417*.
Upeneoides moluccensis Bleeker, 68.
sulphureus (Cuv. and Val.), 68.
tragula (Richardson), 68.
Upeneus bensasi (Temm. and Schleg.), 68.
displurus Playfair, 67.
Uroscelio Kieffer, 291.
luteipes Kieffer, 291.

V

Vanessa io Linn., *264*.
Varuna litterata (Fabr.), *4*.
Vekunta **lineata** Melichar, 270.
Verrilliana, *237*.
Versura, *212*.
maasi Mayer, 197.

W

Wedding feasts of Igorots, 508.
Wharf fishes, 65.
Whitings, 69.
WILEMAN, A. E., Notes on Japanese Lepidoptera and their larvæ: Part I, 247.
Wong fa yu, 69.
WORCESTER, DEAN C., Note on the occurrence of a flying crustacean in the Philippine Islands, 57.
Wrasse fishes, 69.

X

Xanthoxylon schinnifolium S. and Z., 250.
Xenepyris compressicornis Kieffer, 285.
Xenotoleia flavipennis Kieffer, 286.
Xenotoma Foerster, 310.
philippinensis Kieffer, 287, 310.
soror Kieffer, 310.
Xytæma punctatum (Cuv. and Val.), 67.

Y

Yama-joro, 255.
Yat sa yu, 78.
Ying kung, 71.

Z

Zoraida **dorsopunctata** Melichar, 434.
flavicornis Melichar, 433.
puncticosta Melichar, 433.

EXAMINED.

VOL. IX, SEC. D, NO. 1 FEBRUARY, 1914

THE PHILIPPINE JOURNAL OF SCIENCE

ALVIN J. COX, M. A., PH. D.
GENERAL EDITOR

SECTION D

GENERAL BIOLOGY, ETHNOLOGY, AND ANTHROPOLOGY

EDITED WITH THE COÖPERATION OF

M. L. MILLER, PH. D.; R. P. COWLES, PH. D.; C. S. BANKS, M. S.
ALVIN SEALE, A. B.; C. F. BAKER, A. M.
RICHARD C. McGREGOR, A. B.

IMP. BUREAU ENTOM.
13 JUL 1914
Recd. 10 JUL 1914
Anal.

MANILA
BUREAU OF PRINTING
1914

PUBLICATIONS FOR SALE BY THE BUREAU OF SCIENCE, MANILA, PHILIPPINE ISLANDS

ETHNOLOGY

A VOCABULARY OF THE IGOROT LANGUAGE AS SPOKEN BY THE BONTOC IGOROTS

By WALTER CLAYTON CLAPP

Order No. 408. Paper, 89 pages, $0.75, postpaid.

The vocabulary is given in Igorot-English and English-Igorot.

THE NABALOI DIALECT

By OTTO SCHEERER

and

THE BATAKS OF PALAWAN

By EDWARD Y. MILLER

Order No. 403. Paper, $0.25; half morocco, $0.75; postpaid.

The Nabaloi Dialect (65 pages, 29 plates) and the Bataks of Palawan (7 pages, 6 plates) are bound under one cover.

THE BATAN DIALECT AS A MEMBER OF THE PHILIPPINE GROUP OF LANGUAGES

By OTTO SCHEERER

and

"F" AND "V" IN PHILIPPINE LANGUAGES

By CARLOS EVERETT CONANT

Order No. 407.

These two papers are issued under one cover, 141 pages, paper, $0.80, postpaid.

THE SUBANUNS OF SINDANGAN BAY

By EMERSON B. CHRISTIE

Order No. 410. Paper, 121 pages, 1 map, 29 plates, $1.25, postpaid.

Sindangan Bay is situated on the northern coast of Zamboanga Peninsula. The Subanuns of this region were studied by Mr. Christie during two periods of five and six weeks, respectively.

The 29 plates illustrate the Subanuns at work and at play; their industries, houses, altars, and implements; and the people themselves.

THE HISTORY OF SULU

By NAJEEB M. SALEEBY

Order No. 406. Paper, 275 pages, 4 maps, 2 diagrams, $0.75, postpaid.

In the preparation of his manuscript for The History of Sulu, Doctor Saleeby spent much time and effort in gaining access to documents in the possession of the Sultan of Sulu. This book is a history of the Moros in the Philippines from the earliest times to the American occupation.

ETHNOLOGY—Continued

STUDIES IN MORO HISTORY, LAW, AND RELIGION

By NAJEEB M. SALEEBY

Order No. 405. Paper, 107 pages, 16 plates, 5 diagrams, $0.25; half morocco, $0.75; postpaid.

This volume deals with the earliest written records of the Moros in Mindanao. The names of the rulers of Magindanao are recorded in five folding diagrams.

NEGRITOS OF ZAMBALES

By WILLIAM ALLAN REED

Order No. 402. Paper, 83 pages, 62 plates, $0.25; half morocco, $0.75; postpaid.

Plates from photographs, many of which were taken for this publication, show ornaments, houses, men making fire with bamboo, bows and arrows, dances, and various types of the people themselves.

INDUSTRIES

PHILIPPINE HATS

By C. B. ROBINSON

Order No. 415. Paper, 66 pages, 8 plates, $0.50 postpaid.

This paper is a concise record of the history and present condition of hat making in the Philippine Islands.

THE SUGAR INDUSTRY IN THE ISLAND OF NEGROS

By HERBERT S. WALKER

Order No. 412. Paper, 145 pages, 10 plates, 1 map, $1.25, postpaid.

Considered from the viewpoint of practical utility, Mr. Walker's Sugar Industry in the Island of Negros is one of the most important papers published by the Bureau of Science. This volume is a real contribution to the subject; it is not a mere compilation, for the author was in the field and understands the conditions of which he writes.

A MANUAL OF PHILIPPINE SILK CULTURE

By CHARLES S. BANKS

Order No. 413. Paper, 53 pages, 20 plates, $0.75, postpaid.

In A Manual of Philippine Silk Culture are presented the results of several years' actual work with silk-producing larvæ together with a description of the new Philippine race.

PUBLICATIONS FOR SALE BY THE BUREAU OF SCIENCE, MANILA, PHILIPPINE ISLANDS—Continued

BOTANY

A FLORA OF MANILA

By ELMER D. MERRILL

Order No. 419. Paper, 490 pages, $2.50, postpaid.

Practically a complete flora of the cultivated areas in the Philippines. Descriptions, with keys, of over 1,000 species, 590 genera, and 136 families, with native names, glossary of technical terms, etc.

THE COCONUT PALM IN THE PHILIPPINE ISLANDS

Order No. 37. Paper, 149 pages, 30 plates, $1, postpaid.

The reprint contains the following articles: On the Water Relations of the Coconut Palm (Cocos nucifera), The Coconut and its Relation to Coconut Oil, The Keeping Qualities of Coconut Oil and the Causes of its Rancidity, and The Principal Insects Attacking the Coconut Palm.

INDO-MALAYAN WOODS

By FRED W. FOXWORTHY

Order No. 411. Paper, 182 pages, 9 plates, $0.50, postpaid.

In Indo-Malayan Woods, Doctor Foxworthy has brought together a large amount of accurate information concerning trees yielding woods of economic value.

ZOOLOGY

A LIST OF THE MAMMALS OF THE PHILIPPINE ISLANDS, EXCLUSIVE OF THE CETACEA

By NED HOLLISTER

Order No. 418. Paper, 64 pages, $0.50, postpaid.

This is the only recent attempt to enumerate the mammals of the Philippine Islands. The distribution of each species is given, and the original descriptions are cited.

ZOOLOGY—Continued

A MANUAL OF PHILIPPINE BIRDS

By RICHARD C. MCGREGOR

Order No. 103. Paper, 2 parts, 769 pages, $4, postpaid.

A Manual of Philippine Birds contains in compact form descriptions of all the known species of Philippine birds. The usual keys and diagnoses of orders, families, and genera help the novice in identification.

A CHECK-LIST OF PHILIPPINE FISHES

By DAVID STARR JORDAN and ROBERT EARL RICHARDSON

Order No. 102. Paper, 78 pages, $0.75, postpaid.

This list will be found a convenient guide to the synonymy of Philippine ichthyology. The nomenclature is thoroughly revised, and the distribution of each species within the Philippine Islands is given.

MEDICINE

REPORT OF THE INTERNATIONAL PLAGUE CONFERENCE

Held at Mukden, April, 1911, under the auspices of the Chinese Government.

Edited by ERICH MARTINI, G. F. PETRIE, ARTHUR STANLEY, and RICHARD P. STRONG

483 pages, 18 plates (2 colored, 4 halftones, 12 charts and maps)

Order No. 416. Paper, $2.50; cloth, $3.50; postpaid.

The proceedings of this International Conference and information gained therefrom, together with the results of certain bacteriological investigations, constitute the present report.

The Bureau of Science of the Government of the Philippine Islands has been appointed sole agent for the distribution of the printed proceedings of the International Plague Conference.

PRICES ARE IN UNITED STATES CURRENCY

Orders for these publications may be sent to the BUSINESS MANAGER, PHILIPPINE JOURNAL OF SCIENCE, BUREAU OF SCIENCE, MANILA, P. I., or to any of the agents listed below. Please give order number.

The Macmillan Company, 64–66 Fifth Avenue, New York, U. S. A.
Wm. Wesley & Son, 28 Essex Street, Strand, London, W. C., England.
Martinus Nijhoff, Lange Voorhout 9, The Hague, Holland.
Mayer & Müller, Prinz Louis Ferdinandstrasse 2, Berlin, N. W., Germany.
Kelly & Walsh, Ltd., 32 Raffles Place, Singapore, Straits Settlements.
A. M. & J. Ferguson, 19 Baillie Street, Colombo, Ceylon.
Thacker, Spink & Co., P. O. Box 54, Calcutta, India.

CONTENTS

	Page
SEALE, ALVIN. Preservation of Commercial Fish and Fishery Products in the Tropics	1
DAY, ARTEMAS L. The Osseous System of Ophiocephalus striatus Bloch	19
WORCESTER, DEAN C. Note on the Occurrence of a Flying Crustacean in the Philippine Islands	57
SEALE, ALVIN. Fishes of Hongkong	59
KERREMANS, CH. Buprestides Recueillis aux Îles Philippines par C. F. Baker, I	83
SCHULTZE, W. Notes on the Malay Pangolin, Manis javanica Desmarest	93

The "Philippine Journal of Science" is issued as follows:	U. S. currency
Section A. Chemical and Geological Sciences and the Industries	$2.00
Section B. Tropical Medicine	3.00
Section C. Botany	2.00
Section D. General Biology, Ethnology, and Anthropology (Section D began with Volume V)	2.00
Entire Journal, Volume II, III, IV, or V	5.00
Entire Journal, beginning with Volume VI	7.00
Single numbers of Volume I	.75
Single numbers (except of Volume I)	.50
Volume I, 1906 (not divided into sections) and supplement, sold only with a complete file of section A, B, or C	10.00
Supplement to Volume I (Botany)	3.50
Volume I (without supplement), sold only with a complete file of section A, B, or C	6.50

Each section is separately paged and indexed.

Publications sent in exchange for the Philippine Journal of Science should be addressed: Library, Bureau of Science, Manila, P. I.

Subscriptions may be sent to the BUSINESS MANAGER, Philippine Journal of Science, Bureau of Science, Manila, P. I., or to any of the agents listed below:

AGENTS

The Macmillan Company, 64–66 Fifth Avenue, New York City, U. S. A.
Wm. Wesley & Son, 28 Essex Street, Strand, London, W. C., England.
Martinus Nijhoff, Lange Voorhout 9, The Hague, Holland.
Mayer & Müller, Prinz Louis Ferdinandstrasse 2, Berlin, N. W., Germany.
Kelly & Walsh, Limited, 32 Raffles Place, Singapore, Straits Settlements.
A. M. & J. Ferguson, 19 Baillie Street, Colombo, Ceylon.
Thacker, Spink & Co., P. O. Box 54, Calcutta, India.

Entered at the post-office at Manila, P. I., as second-class matter

EXAMINED

VOL. IX, SEC. D, NO. 2 APRIL, 1914

THE PHILIPPINE JOURNAL OF SCIENCE

ALVIN J. COX, M. A., PH. D.
GENERAL EDITOR

SECTION D

GENERAL BIOLOGY, ETHNOLOGY, AND ANTHROPOLOGY

EDITED WITH THE COÖPERATION OF

M. L. MILLER, PH. D.; R. P. COWLES, PH. D.; C. S. BANKS, M. S.
ALVIN SEALE, A. B.; C. F. BAKER, A. M.
RICHARD C. McGREGOR, A. B.

IMP. BUREAU ENTOM.
9 - OCT 1914
Recd. 10 OCT 1914
Ansd.

MANILA
BUREAU OF PRINTING
1914

PUBLICATIONS FOR SALE BY THE BUREAU OF SCIENCE, MANILA, PHILIPPINE ISLANDS

ETHNOLOGY

A VOCABULARY OF THE IGOROT LANGUAGE AS SPOKEN BY THE BONTOC IGOROTS

By WALTER CLAYTON CLAPP

Order No. 408. Paper, 89 pages, $0.75, postpaid.

The vocabulary is given in Igorot-English and English-Igorot.

THE NABALOI DIALECT

By OTTO SCHEERER

and

THE BATAKS OF PALAWAN

By EDWARD Y. MILLER

Order No. 403. Paper, $0.25; half morocco, $0.75; postpaid.

The Nabaloi Dialect (65 pages, 29 plates) and the Bataks of Palawan (7 pages, 6 plates) are bound under one cover.

THE BATAN DIALECT AS A MEMBER OF THE PHILIPPINE GROUP OF LANGUAGES

By OTTO SCHEERER

and

"F" AND "V" IN PHILIPPINE LANGUAGES

By CARLOS EVERETT CONANT

Order No. 407.

These two papers are issued under one cover, 141 pages, paper, $0.80, postpaid.

THE SUBANUNS OF SINDANGAN BAY

By EMERSON B. CHRISTIE

Order No. 410. Paper, 121 pages, 1 map, 29 plates, $1.25, postpaid.

Sindangan Bay is situated on the northern coast of Zamboanga Peninsula. The Subanuns of this region were studied by Mr. Christie during two periods of five and six weeks, respectively.

The 29 plates illustrate the Subanuns at work and at play; their industries, houses, altars, and implements; and the people themselves.

THE HISTORY OF SULU

By NAJEEB M. SALEEBY

Order No. 406. Paper, 275 pages, 4 maps, 2 diagrams, $0.75, postpaid.

In the preparation of his manuscript for The History of Sulu, Doctor Saleeby spent much time and effort in gaining access to documents in the possession of the Sultan of Sulu. This book is a history of the Moros in the Philippines from the earliest times to the American occupation.

ETHNOLOGY—Continued

STUDIES IN MORO HISTORY, LAW, AND RELIGION

By NAJEEB M. SALEEBY

Order No. 405. Paper, 107 pages, 16 plates, 5 diagrams, $0.25; half morocco, $0.75; postpaid.

This volume deals with the earliest written records of the Moros in Mindanao. The names of the rulers of Magindanao are recorded in five folding diagrams.

NEGRITOS OF ZAMBALES

By WILLIAM ALLAN REED

Order No. 402. Paper, 83 pages, 62 plates, $0.25; half morocco, $0.75; postpaid.

Plates from photographs, many of which were taken for this publication, show ornaments, houses, men making fire with bamboo, bows and arrows, dances, and various types of the people themselves.

INDUSTRIES

PHILIPPINE HATS

By C. B. ROBINSON

Order No. 415. Paper, 66 pages, 8 plates, $0.50 postpaid.

This paper is a concise record of the history and present condition of hat making in the Philippine Islands.

THE SUGAR INDUSTRY IN THE ISLAND OF NEGROS

By HERBERT S. WALKER

Order No. 412. Paper, 145 pages, 10 plates, 1 map, $1.25, postpaid.

Considered from the viewpoint of practical utility, Mr. Walker's Sugar Industry in the Island of Negros is one of the most important papers published by the Bureau of Science. This volume is a real contribution to the subject; it is not a mere compilation, for the author was in the field and understands the conditions of which he writes.

A MANUAL OF PHILIPPINE SILK CULTURE

By CHARLES S. BANKS

Order No. 413. Paper, 53 pages, 20 plates, $0.75, postpaid.

In A Manual of Philippine Silk Culture are presented the results of several years' actual work with silk-producing larvæ together with a description of the new Philippine race.

PUBLICATIONS FOR SALE BY THE BUREAU OF SCIENCE, MANILA, PHILIPPINE ISLANDS—Continued

BOTANY

A FLORA OF MANILA

By ELMER D. MERRILL

Order No. 419. Paper, 490 pages, $2.50, postpaid.

Practically a complete flora of the cultivated areas in the Philippines. Descriptions, with keys, of over 1,000 species, 590 genera, and 136 families, with native names, glossary of technical terms, etc.

THE COCONUT PALM IN THE PHILIPPINE ISLANDS

Order No. 37. Paper, 149 pages, 30 plates, $1, postpaid.

The reprint contains the following articles: On the Water Relations of the Coconut Palm (Cocos nucifera), The Coconut and its Relation to Coconut Oil, The Keeping Qualities of Coconut Oil and the Causes of its Rancidity, and The Principal Insects Attacking the Coconut Palm.

INDO-MALAYAN WOODS

By FRED W. FOXWORTHY

Order No. 411. Paper, 182 pages, 9 plates, $0.50, postpaid.

In Indo-Malayan Woods, Doctor Foxworthy has brought together a large amount of accurate information concerning trees yielding woods of economic value.

ZOOLOGY

A LIST OF THE MAMMALS OF THE PHILIPPINE ISLANDS, EXCLUSIVE OF THE CETACEA

By NED HOLLISTER

Order No. 418. Paper, 64 pages, $0.50, postpaid.

This is the only recent attempt to enumerate the mammals of the Philippine Islands. The distribution of each species is given, and the original descriptions are cited.

ZOOLOGY—Continued

A MANUAL OF PHILIPPINE BIRDS

By RICHARD C. MCGREGOR

Order No. 103. Paper, 2 parts, 769 pages, $4, postpaid.

A Manual of Philippine Birds contains in compact form descriptions of all the known species of Philippine birds. The usual keys and diagnoses of orders, families, and genera help the novice in identification.

A CHECK-LIST OF PHILIPPINE FISHES

By DAVID STARR JORDAN and ROBERT EARL RICHARDSON

Order No. 102. Paper, 78 pages, $0.75, postpaid.

This list will be found a convenient guide to the synonymy of Philippine ichthyology. The nomenclature is thoroughly revised, and the distribution of each species within the Philippine Islands is given.

MEDICINE

REPORT OF THE INTERNATIONAL PLAGUE CONFERENCE

Held at Mukden, April, 1911, under the auspices of the Chinese Government.

Edited by ERICH MARTINI, G. F. PETRIE, ARTHUR STANLEY, and RICHARD P. STRONG

483 pages, 18 plates (2 colored, 4 halftones, 12 charts and maps)

Order No. 416. Paper, $2.50; cloth, $3.50; postpaid.

The proceedings of this International Conference and information gained therefrom, together with the results of certain bacteriological investigations, constitute the present report.

The Bureau of Science of the Government of the Philippine Islands has been appointed sole agent for the distribution of the printed proceedings of the International Plague Conference.

PRICES ARE IN UNITED STATES CURRENCY

Orders for these publications may be sent to the BUSINESS MANAGER, PHILIPPINE JOURNAL OF SCIENCE, BUREAU OF SCIENCE, MANILA, P. I., or to any of the agents listed below. Please give order number.

The Macmillan Company, 64–66 Fifth Avenue, New York, U. S. A.
Wm. Wesley & Son, 28 Essex Street, Strand, London, W. C., England.
Martinus Nijhoff, Lange Voorhout 9, The Hague, Holland.
Mayer & Müller, Prinz Louis Ferdinandstrasse 2, Berlin, N. W., Germany.
Kelly & Walsh, Ltd., 32 Raffles Place, Singapore, Straits Settlements.
A. M. & J. Ferguson, 19 Baillie Street, Colombo, Ceylon.
Thacker, Spink & Co., P. O. Box 54, Calcutta, India.

CONTENTS

	Page.
CHRISTIE, EMERSON B. Notes on Irrigation and Coöperative Irrigation Societies in Ilocos Norte	99
CHRISTIE, EMERSON B. Notes on the Pottery Industry in San Nicolas, Ilocos Norte	117
CAIN, ANDREW W. History of the Spanish Normal School for Men Teachers in Manila 1865–1905	123
MELICHAR, L. Neue Homopteren von den Philippinen	173
KIEFFER, J. J. Nouveaux Cynipides des Philippines	183
DAY, ARTEMAS L. Two New Cyprinoid Fishes of the Genus Barbus from Lake Manguao, Palawan, P. I	187

The "Philippine Journal of Science" is issued as follows:	U. S. currency
Section A. Chemical and Geological Sciences and the Industries	$2.00
Section B. Tropical Medicine	3.00
Section C. Botany	2.00
Section D. General Biology, Ethnology, and Anthropology (Section D began with Volume V)	2.00
Entire Journal, Volume II, III, IV, or V	5.00
Entire Journal, beginning with Volume VI	7.00
Single numbers of Volume I	.75
Single numbers (except of Volume I)	.50
Volume I, 1906 (not divided into sections) and supplement, sold only with a complete file of section A, B, or C	10.00
Supplement to Volume I (Botany)	3.50
Volume I (without supplement), sold only with a complete file of section A, B, or C	6.50

Each section is separately paged and indexed.

Publications sent in exchange for the Philippine Journal of Science should be addressed: Library, Bureau of Science, Manila, P. I.

Subscriptions may be sent to the BUSINESS MANAGER, Philippine Journal of Science, Bureau of Science, Manila, P. I., or to any of the agents listed below:

AGENTS

The Macmillan Company, 64–66 Fifth Avenue, New York City, U. S. A.
Wm. Wesley & Son, 28 Essex Street, Strand, London, W. C., England.
Martinus Nijhoff, Lange Voorhout 9, The Hague, Holland.
Mayer & Müller, Prinz Louis Ferdinandstrasse 2, Berlin, N. W., Germany.
Kelly & Walsh, Limited, 32 Raffles Place, Singapore, Straits Settlements.
A. M. & J. Ferguson, 19 Baillie Street, Colombo, Ceylon.
Thacker, Spink & Co., P. O. Box 54, Calcutta, India.

Entered at the post-office at Manila, P. I., as second-class matter

EXAMINED

VOL. IX, SEC. D, NO. 3 JUNE, 1914

THE PHILIPPINE JOURNAL OF SCIENCE

ALVIN J. COX, M. A., PH. D.
GENERAL EDITOR

SECTION D

GENERAL BIOLOGY, ETHNOLOGY, AND ANTHROPOLOGY

EDITED WITH THE COÖPERATION OF

M. L. MILLER, PH. D.; R. P. COWLES, PH. D.; C. S. BANKS, M. S.
ALVIN SEALE, A. B.; C. F. BAKER, A. M.
RICHARD C. McGREGOR, A. B.

BUREAU OF SCIENCE
MANILA

IMP. BUREAU ENTOM.
18 NOV 1914
Recd. 16 NOV 1914
Ansd.

MANILA
BUREAU OF PRINTING
1914

PUBLICATIONS FOR SALE BY THE BUREAU OF SCIENCE, MANILA, PHILIPPINE ISLANDS

ETHNOLOGY

A VOCABULARY OF THE IGOROT LANGUAGE AS SPOKEN BY THE BONTOC IGOROTS

By WALTER CLAYTON CLAPP

Order No. 408. Paper, 89 pages, $0.75, postpaid.

The vocabulary is given in Igorot-English and English-Igorot.

THE NABALOI DIALECT

By OTTO SCHEERER

and

THE BATAKS OF PALAWAN

By EDWARD Y. MILLER

Order No. 403. Paper, $0.25; half morocco, $0.75; postpaid.

The Nabaloi Dialect (65 pages, 29 plates) and the Bataks of Palawan (7 pages, 6 plates) are bound under one cover.

THE BATAN DIALECT AS A MEMBER OF THE PHILIPPINE GROUP OF LANGUAGES

By OTTO SCHEERER

and

"F" AND "V" IN PHILIPPINE LANGUAGES

By CARLOS EVERETT CONANT

Order No. 407.

These two papers are issued under one cover, 141 pages, paper, $0.80, postpaid.

THE SUBANUNS OF SINDANGAN BAY

By EMERSON B. CHRISTIE

Order No. 410. Paper, 121 pages, 1 map, 29 plates, $1.25, postpaid.

Sindangan Bay is situated on the northern coast of Zamboanga Peninsula. The Subanuns of this region were studied by Mr. Christie during two periods of five and six weeks, respectively.

The 29 plates illustrate the Subanuns at work and at play; their industries, houses, altars, and implements; and the people themselves.

THE HISTORY OF SULU

By NAJEEB M. SALEEBY

Order No. 406. Paper, 275 pages, 4 maps, 2 diagrams, $0.75, postpaid.

In the preparation of his manuscript for The History of Sulu, Doctor Saleeby spent much time and effort in gaining access to documents in the possession of the Sultan of Sulu. This book is a history of the Moros in the Philippines from the earliest times to the American occupation.

ETHNOLOGY—Continued

STUDIES IN MORO HISTORY, LAW, AND RELIGION

By NAJEEB M. SALEEBY

Order No. 405. Paper, 107 pages, 16 plates, 5 diagrams, $0.25; half morocco, $0.75; postpaid.

This volume deals with the earliest written records of the Moros in Mindanao. The names of the rulers of Magindanao are recorded in five folding diagrams.

NEGRITOS OF ZAMBALES

By WILLIAM ALLAN REED

Order No. 402. Paper, 83 pages, 62 plates, $0.25; half morocco, $0.75; postpaid.

Plates from photographs, many of which were taken for this publication, show ornaments, houses, men making fire with bamboo, bows and arrows, dances, and various types of the people themselves.

INDUSTRIES

PHILIPPINE HATS

By C. B. ROBINSON

Order No. 415. Paper, 66 pages, 8 plates, $0.50 postpaid.

This paper is a concise record of the history and present condition of hat making in the Philippine Islands.

THE SUGAR INDUSTRY IN THE ISLAND OF NEGROS

By HERBERT S. WALKER

Order No. 412. Paper, 145 pages, 10 plates, 1 map, $1.25, postpaid.

Considered from the viewpoint of practical utility, Mr. Walker's Sugar Industry in the Island of Negros is one of the most important papers published by the Bureau of Science. This volume is a real contribution to the subject; it is not a mere compilation, for the author was in the field and understands the conditions of which he writes.

A MANUAL OF PHILIPPINE SILK CULTURE

By CHARLES S. BANKS

Order No. 413. Paper, 53 pages, 20 plates, $0.75, postpaid.

In A Manual of Philippine Silk Culture are presented the results of several years' actual work with silk-producing larvæ together with a description of the new Philippine race.

PUBLICATIONS FOR SALE BY THE BUREAU OF SCIENCE, MANILA, PHILIPPINE ISLANDS—Continued

BOTANY

A FLORA OF MANILA

By ELMER D. MERRILL

Order No. 419. Paper, 490 pages, $2.50, postpaid.

Practically a complete flora of the cultivated areas in the Philippines. Descriptions, with keys, of over 1,000 species, 590 genera, and 136 families, with native names, glossary of technical terms, etc.

THE COCONUT PALM IN THE PHILIPPINE ISLANDS

Order No. 37. Paper, 149 pages, 30 plates, $1, postpaid.

The reprint contains the following articles: On the Water Relations of the Coconut Palm (Cocos nucifera), The Coconut and its Relation to Coconut Oil, The Keeping Qualities of Coconut Oil and the Causes of its Rancidity, and The Principal Insects Attacking the Coconut Palm.

INDO-MALAYAN WOODS

By FRED W. FOXWORTHY

Order No. 411. Paper, 182 pages, 9 plates, $0.50, postpaid.

In Indo-Malayan Woods, Doctor Foxworthy has brought together a large amount of accurate information concerning trees yielding woods of economic value.

ZOOLOGY

A LIST OF THE MAMMALS OF THE PHILIPPINE ISLANDS, EXCLUSIVE OF THE CETACEA

By NED HOLLISTER

Order No. 418. Paper, 64 pages, $0.50, postpaid.

This is the only recent attempt to enumerate the mammals of the Philippine Islands. The distribution of each species is given, and the original descriptions are cited.

ZOOLOGY—Continued

A MANUAL OF PHILIPPINE BIRDS

By RICHARD C. MCGREGOR

Order No. 103. Paper, 2 parts, 769 pages, $4, postpaid.

A Manual of Philippine Birds contains in compact form descriptions of all the known species of Philippine birds. The usual keys and diagnoses of orders, families, and genera help the novice in identification.

A CHECK-LIST OF PHILIPPINE FISHES

By DAVID STARR JORDAN and ROBERT EARL RICHARDSON

Order No. 102. Paper, 78 pages, $0.75, postpaid.

This list will be found a convenient guide to the synonymy of Philippine ichthyology. The nomenclature is thoroughly revised, and the distribution of each species within the Philippine Islands is given.

MEDICINE

REPORT OF THE INTERNATIONAL PLAGUE CONFERENCE

Held at Mukden, April, 1911, under the auspices of the Chinese Government.

Edited by ERICH MARTINI, G. F. PETRIE, ARTHUR STANLEY, and RICHARD P. STRONG.

483 pages, 18 plates (2 colored, 4 halftones, 12 charts and maps)

Order No. 416. Paper, $2.50; cloth, $3.50; postpaid.

The proceedings of this International Conference and information gained therefrom, together with the results of certain bacteriological investigations, constitute the present report.

The Bureau of Science of the Government of the Philippine Islands has been appointed sole agent for the distribution of the printed proceedings of the International Plague Conference.

PRICES ARE IN UNITED STATES CURRENCY

Orders for these publications may be sent to the BUSINESS MANAGER, PHILIPPINE JOURNAL OF SCIENCE, BUREAU OF SCIENCE, MANILA, P. I., or to any of the agents listed below. Please give order number.

The Macmillan Company, 64–66 Fifth Avenue, New York, U. S. A.
Wm. Wesley & Son, 28 Essex Street, Strand, London, W. C., England.
Martinus Nijhoff, Lange Voorhout 9, The Hague, Holland.
Mayer & Müller, Prinz Louis Ferdinandstrasse 2, Berlin, N. W., Germany.
Kelly & Walsh, Ltd., 32 Raffles Place, Singapore, Straits Settlements.
A. M. & J. Ferguson, 19 Baillie Street, Colombo, Ceylon.
Thacker, Spink & Co., P. O. Box 54, Calcutta, India.

CONTENTS

	Page.
LIGHT, S. F. Some Philippine Scyphomedusæ, Including Two New Genera, Five New Species, and One New Variety	195
LIGHT, S. F. Notes on Philippine Alcyonaria. Part II: Lemnalioides kükenthali, a New Genus and Species of Alcyonaria from the Philippines and a Discussion of the Systematic Position of the New Genus	233
WILEMAN, A. E. Notes on Japanese Lepidoptera and their Larvæ: Part I	247
MELICHAR, L. Neue Fulgoriden von den Philippinen: I. Theil	269
KIEFFER, J. J. Enumération des Serphides (Proctotrupides) des Îles Philippines avec Description de Genres Nouveaux et d'Espèces Nouvelles	285
SCHULTZE, W. Notes on a Nesting Place of Crocodilus palustris Lesson	313

The "Philippine Journal of Science" is issued as follows:	**U. S. currency**
Section A. Chemical and Geological Sciences and the Industries	**$2.00**
Section B. Tropical Medicine	**3.00**
Section C. Botany	**2.00**
Section D. General Biology, Ethnology, and Anthropology (Section D began with Volume V)	**2.00**
Entire Journal, Volume II, III, IV, or V	**5.00**
Entire Journal, beginning with Volume VI	**7.00**
Single numbers of Volume I	**.75**
Single numbers (except of Volume I)	**.50**
Volume I, 1906 (not divided into sections) and supplement, sold only with a complete file of section A, B, or C	**10.00**
Supplement to Volume I (Botany)	**3.50**
Volume I (without supplement), sold only with a complete file of section A, B, or C	**6.50**

Each section is separately paged and indexed.

Publications sent in exchange for the Philippine Journal of Science should be addressed: Library, Bureau of Science, Manila, P. I.

Subscriptions may be sent to the BUSINESS MANAGER, Philippine Journal of Science, Bureau of Science, Manila, P. I., or to any of the agents listed below:

AGENTS

The Macmillan Company, 64–66 Fifth Avenue, New York City, U. S. A.
Wm. Wesley & Son, 28 Essex Street, Strand, London, W. C., England.
Martinus Nijhoff, Lange Voorhout 9, The Hague, Holland.
Mayer & Müller, Prinz Louis Ferdinandstrasse 2, Berlin, N. W., Germany.
Kelly & Walsh, Limited, 32 Raffles Place, Singapore, Straits Settlements.
A. M. & J. Ferguson, 19 Baillie Street, Colombo, Ceylon.
Thacker, Spink & Co., P. O. Box 54, Calcutta, India.

Entered at the post-office at Manila, P. I., as second-class matter

VOL. IX, SEC. D, No. 4 AUGUST, 1914

THE PHILIPPINE JOURNAL OF SCIENCE

ALVIN J. COX, M. A., PH. D.
GENERAL EDITOR

SECTION D

GENERAL BIOLOGY, ETHNOLOGY, AND ANTHROPOLOGY

EDITED WITH THE COÖPERATION OF

M. L. MILLER, PH. D.; R. P. COWLES, PH. D.; C. S. BANKS, M. S.
ALVIN SEALE, A. B.; C. F. BAKER, A. M.
RICHARD C. McGREGOR, A. B.

IMP. BUREAU ENTOM.
19 MAY 1915
Recd. 17 MAY 1915

MANILA
BUREAU OF PRINTING
1914

PUBLICATIONS FOR SALE BY THE BUREAU OF SCIENCE, MANILA, PHILIPPINE ISLANDS

ETHNOLOGY

A VOCABULARY OF THE IGOROT LANGUAGE AS SPOKEN BY THE BONTOC IGOROTS

By WALTER CLAYTON CLAPP

Order No. 408. Paper, 89 pages, $0.75, postpaid.

The vocabulary is given in Igorot-English and English-Igorot.

THE NABALOI DIALECT

By OTTO SCHEERER

and

THE BATAKS OF PALAWAN

By EDWARD Y. MILLER

Order No. 403. Paper, $0.25; half morocco, $0.75; postpaid.

The Nabaloi Dialect (65 pages, 29 plates) and the Bataks of Palawan (7 pages, 6 plates) are bound under one cover.

THE BATAN DIALECT AS A MEMBER OF THE PHILIPPINE GROUP OF LANGUAGES

By OTTO SCHEERER

and

"F" AND "V" IN PHILIPPINE LANGUAGES

By CARLOS EVERETT CONANT

Order No. 407.

These two papers are issued under one cover, 141 pages, paper, $0.80, postpaid.

THE SUBANUNS OF SINDANGAN BAY

By EMERSON B. CHRISTIE

Order No. 410. Paper, 121 pages, 1 map, 29 plates, $1.25, postpaid.

Sindangan Bay is situated on the northern coast of Zamboanga Peninsula. The Subanuns of this region were studied by Mr. Christie during two periods of five and six weeks, respectively.

The 29 plates illustrate the Subanuns at work and at play; their industries, houses, altars, and implements; and the people themselves.

THE HISTORY OF SULU

By NAJEEB M. SALEEBY

Order No. 406. Paper, 275 pages, 4 maps, 2 diagrams, $0.75, postpaid.

In the preparation of his manuscript for The History of Sulu, Doctor Saleeby spent much time and effort in gaining access to documents in the possession of the Sultan of Sulu. This book is a history of the Moros in the Philippines from the earliest times to the American occupation.

ETHNOLOGY—Continued

STUDIES IN MORO HISTORY, LAW, AND RELIGION

By NAJEEB M. SALEEBY

Order No. 405. Paper, 107 pages, 16 plates, 5 diagrams, $0.25; half morocco, $0.75; postpaid.

This volume deals with the earliest written records of the Moros in Mindanao. The names of the rulers of Magindanao are recorded in five folding diagrams.

NEGRITOS OF ZAMBALES

By WILLIAM ALLAN REED

Order No. 402. Paper, 83 pages, 62 plates, $0.25; half morocco, $0.75; postpaid.

Plates from photographs, many of which were taken for this publication, show ornaments, houses, men making fire with bamboo, bows and arrows, dances, and various types of the people themselves.

INDUSTRIES

PHILIPPINE HATS

By C. B. ROBINSON

Order No. 415. Paper, 66 pages, 8 plates, $0.50 postpaid.

This paper is a concise record of the history and present condition of hat making in the Philippine Islands.

THE SUGAR INDUSTRY IN THE ISLAND OF NEGROS

By HERBERT S. WALKER

Order No. 412. Paper, 145 pages, 10 plates, 1 map, $1.25, postpaid.

Considered from the viewpoint of practical utility, Mr. Walker's Sugar Industry in the island of Negros is one of the most important papers published by the Bureau of Science. This volume is a real contribution to the subject; it is not a mere compilation, for the author was in the field and understands the conditions of which he writes.

A MANUAL OF PHILIPPINE SILK CULTURE

By CHARLES S. BANKS

Order No. 413. Paper, 53 pages, 20 plates, $0.75, postpaid.

In A Manual of Philippine Silk Culture are presented the results of several years' actual work with silk-producing larvæ together with a description of the new Philippine race.

PUBLICATIONS FOR SALE BY THE BUREAU OF SCIENCE, MANILA, PHILIPPINE ISLANDS—Continued

BOTANY

A FLORA OF MANILA

By ELMER D. MERRILL

Order No. 419. Paper, 490 pages, $2.50, postpaid.

Practically a complete flora of the cultivated areas in the Philippines. Descriptions, with keys, of over 1,000 species, 590 genera, and 136 families, with native names, glossary of technical terms, etc.

THE COCONUT PALM IN THE PHILIPPINE ISLANDS

Order No. 37. Paper, 149 pages, 30 plates, $1, postpaid.

The reprint contains the following articles: On the Water Relations of the Coconut Palm (Cocos nucifera), The Coconut and its Relation to Coconut Oil, The Keeping Qualities of Coconut Oil and the Causes of its Rancidity, and The Principal Insects Attacking the Coconut Palm.

INDO-MALAYAN WOODS

By FRED W. FOXWORTHY

Order No. 411. Paper, 182 pages, 9 plates, $0.50, postpaid.

In Indo-Malayan Woods, Doctor Foxworthy has brought together a large amount of accurate information concerning trees yielding woods of economic value.

ZOOLOGY

A LIST OF THE MAMMALS OF THE PHILIPPINE ISLANDS, EXCLUSIVE OF THE CETACEA

By NED HOLLISTER

Order No. 418. Paper, 64 pages, $0.50, postpaid.

This is the only recent attempt to enumerate the mammals of the Philippine Islands. The distribution of each species is given, and the original descriptions are cited.

ZOOLOGY—Continued

A MANUAL OF PHILIPPINE BIRDS

By RICHARD C. MCGREGOR

Order No. 103. Paper, 2 parts, 769 pages, $4, postpaid.

A Manual of Philippine Birds contains in compact form descriptions of all the known species of Philippine birds. The usual keys and diagnoses of orders, families, and genera help the novice in identification.

A CHECK-LIST OF PHILIPPINE FISHES

By DAVID STARR JORDAN and ROBERT EARL RICHARDSON

Order No. 102. Paper, 78 pages, $0.75, postpaid.

This list will be found a convenient guide to the synonymy of Philippine ichthyology. The nomenclature is thoroughly revised, and the distribution of each species within the Philippine Islands is given.

MEDICINE

REPORT OF THE INTERNATIONAL PLAGUE CONFERENCE

Held at Mukden, April, 1911, under the auspices of the Chinese Government.

Edited by ERICH MARTINI, G. F. PETRIE, ARTHUR STANLEY, and RICHARD P. STRONG

483 pages, 18 plates (2 colored, 4 halftones, 12 charts and maps)

Order No. 416. Paper, $2.50; cloth, $3.50; postpaid.

The proceedings of this International Conference and information gained therefrom, together with the results of certain bacteriological investigations, constitute the present report.

The Bureau of Science of the Government of the Philippine Islands has been appointed sole agent for the distribution of the printed proceedings of the International Plague Conference.

PRICES ARE IN UNITED STATES CURRENCY

Orders for these publications may be sent to the BUSINESS MANAGER, PHILIPPINE JOURNAL OF SCIENCE, BUREAU OF SCIENCE, MANILA, P. I., or to any of the agents listed below. Please give order number.

The Macmillan Company, 64–66 Fifth Avenue, New York, U. S. A.
Wm. Wesley & Son, 28 Essex Street, Strand, London, W. C., England.
Martinus Nijhoff, Lange Voorhout 9, The Hague, Holland.
Mayer & Müller, Prinz Louis Ferdinandstrasse 2, Berlin, N. W., Germany.
Kelly & Walsh, Ltd., 32 Raffles Place, Singapore, Straits Settlements.
A. M. & J. Ferguson, 19 Baillie Street, Colombo, Ceylon.
Thacker, Spink & Co., P. O. Box 54, Calcutta, India.

CONTENTS

	Page.
COWLES, R. P. Palaemons of the Philippine Islands	319
BANKS, CHARLES S. A New Philippine Malaria Mosquito	405

The "Philippine Journal of Science" is issued as follows:	U. S. currency
Section A. Chemical and Geological Sciences and the Industries	$2.00
Section B. Tropical Medicine	3.00
Section C. Botany	2.00
Section D. General Biology, Ethnology, and Anthropology (Section D began with Volume V)	2.00
Entire Journal, Volume II, III, IV, or V	5.00
Entire Journal, beginning with Volume VI	7.00
Single numbers of Volume I	.75
Single numbers (except of Volume I)	.50
Volume I, 1906 (not divided into sections) and supplement, sold only with a complete file of section A, B, or C	10.00
Supplement to Volume I (Botany)	3.50
Volume I (without supplement), sold only with a complete file of section A, B, or C	6.50

Each section is separately paged and indexed.

Publications sent in exchange for the Philippine Journal of Science should be addressed: Library, Bureau of Science, Manila, P. I.

Subscriptions may be sent to the BUSINESS MANAGER, Philippine Journal of Science, Bureau of Science, Manila, P. I., or to any of the agents listed below:

AGENTS

The Macmillan Company, 64–66 Fifth Avenue, New York City, U. S. A.
Wm. Wesley & Son, 28 Essex Street, Strand, London, W. C., England.
Martinus Nijhoff, Lange Voorhout 9, The Hague, Holland.
Mayer & Müller, Prinz Louis Ferdinandstrasse 2, Berlin, N. W., Germany.
Kelly & Walsh, Limited, 32 Raffles Place, Singapore, Straits Settlements.
A. M. & J. Ferguson, 19 Baillie Street, Colombo, Ceylon.
Thacker, Spink & Co., P. O. Box 54, Calcutta, India.

Entered at the post-office at Manila, P. I., as second-class matter

EXAMINED

VOL. IX, SEC. D, NO. 5 SEPTEMBER, 1914

THE PHILIPPINE JOURNAL OF SCIENCE

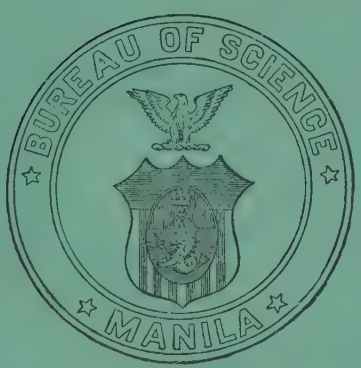
ALVIN J. COX, M. A., PH. D.
GENERAL EDITOR

SECTION D

GENERAL BIOLOGY, ETHNOLOGY, AND ANTHROPOLOGY

EDITED WITH THE COÖPERATION OF

M. L. MILLER, PH. D.; R. P. COWLES, PH. D.; C. S. BANKS, M. S.
ALVIN SEALE, A. B.; C. F. BAKER, A. M.
RICHARD C. McGREGOR, A. B.



IMP. BUREAU ENTOM.
8 JUN 1915
Rec'd. 7 JUN 1915

MANILA
BUREAU OF PRINTING
1914

PUBLICATIONS FOR SALE BY THE BUREAU OF SCIENCE, MANILA, PHILIPPINE ISLANDS

ETHNOLOGY

A VOCABULARY OF THE IGOROT LANGUAGE AS SPOKEN BY THE BONTOC IGOROTS

By WALTER CLAYTON CLAPP

Order No. 408. Paper, 89 pages, $0.75, postpaid.

The vocabulary is given in Igorot-English and English-Igorot.

THE NABALOI DIALECT

By OTTO SCHEERER

and

THE BATAKS OF PALAWAN

By EDWARD Y. MILLER

Order No. 403. Paper, $0.25; half morocco, $0.75; postpaid.

The Nabaloi Dialect (65 pages, 29 plates) and the Bataks of Palawan (7 pages, 6 plates) are bound under one cover.

THE BATAN DIALECT AS A MEMBER OF THE PHILIPPINE GROUP OF LANGUAGES

By OTTO SCHEERER

and

"F" AND "V" IN PHILIPPINE LANGUAGES

By CARLOS EVERETT CONANT

Order No. 407.

These two papers are issued under one cover, 141 pages, paper, $0.80, postpaid.

THE SUBANUNS OF SINDANGAN BAY

By EMERSON B. CHRISTIE

Order No. 410. Paper, 121 pages, 1 map, 29 plates, $1.25, postpaid.

Sindangan Bay is situated on the northern coast of Zamboanga Peninsula. The Subanuns of this region were studied by Mr. Christie during two periods of five and six weeks, respectively.

The 29 plates illustrate the Subanuns at work and at play; their industries, houses, altars, and implements; and the people themselves.

THE HISTORY OF SULU

By NAJEEB M. SALEEBY

Order No. 406. Paper, 275 pages, 4 maps, 2 diagrams, $0.75, postpaid.

In the preparation of his manuscript for The History of Sulu, Doctor Saleeby spent much time and effort in gaining access to documents in the possession of the Sultan of Sulu. This book is a history of the Moros in the Philippines from the earliest times to the American occupation.

ETHNOLOGY—Continued

STUDIES IN MORO HISTORY, LAW, AND RELIGION

By NAJEEB M. SALEEBY

Order No. 405. Paper, 107 pages, 16 plates, 5 diagrams, $0.25; half morocco, $0.75; postpaid.

This volume deals with the earliest written records of the Moros in Mindanao. The names of the rulers of Magindanao are recorded in five folding diagrams.

NEGRITOS OF ZAMBALES

By WILLIAM ALLAN REED

Order No. 402. Paper, 83 pages, 62 plates, $0.25; half morocco, $0.75; postpaid.

Plates from photographs, many of which were taken for this publication, show ornaments, houses, men making fire with bamboo, bows and arrows, dances, and various types of the people themselves.

INDUSTRIES

PHILIPPINE HATS

By C. B. ROBINSON

Order No. 415. Paper, 66 pages, 8 plates, $0.50 postpaid.

This paper is a concise record of the history and present condition of hat making in the Philippine Islands.

THE SUGAR INDUSTRY IN THE ISLAND OF NEGROS

By HERBERT S. WALKER

Order No. 412. Paper, 145 pages, 10 plates, 1 map, $1.25, postpaid.

Considered from the viewpoint of practical utility, Mr. Walker's Sugar Industry in the Island of Negros is one of the most important papers published by the Bureau of Science. This volume is a real contribution to the subject; it is not a mere compilation, for the author was in the field and understands the conditions of which he writes.

A MANUAL OF PHILIPPINE SILK CULTURE

By CHARLES S. BANKS

Order No. 413. Paper, 53 pages, 20 plates, $0.75, postpaid.

In A Manual of Philippine Silk Culture are presented the results of several years' actual work with silk-producing larvæ together with a description of the new Philippine race.

PUBLICATIONS FOR SALE BY THE BUREAU OF SCIENCE, MANILA, PHILIPPINE ISLANDS—Continued

BOTANY

A FLORA OF MANILA

By ELMER D. MERRILL

Order No. 419. Paper, 490 pages, $2.50, postpaid.

Practically a complete flora of the cultivated areas in the Philippines. Descriptions, with keys, of over 1,000 species, 590 genera, and 136 families, with native names, glossary of technical terms, etc.

THE COCONUT PALM IN THE PHILIPPINE ISLANDS

Order No. 37. Paper, 149 pages, 30 plates, $1, postpaid.

The reprint contains the following articles: On the Water Relations of the Coconut Palm (Cocos nucifera), The Coconut and its Relation to Coconut Oil, The Keeping Qualities of Coconut Oil and the Causes of its Rancidity, and The Principal Insects Attacking the Coconut Palm.

INDO-MALAYAN WOODS

By FRED W. FOXWORTHY

Order No. 411. Paper, 182 pages, 9 plates, $0.50, postpaid.

In Indo-Malayan Woods, Doctor Foxworthy has brought together a large amount of accurate information concerning trees yielding woods of economic value.

ZOOLOGY

A LIST OF THE MAMMALS OF THE PHILIPPINE ISLANDS, EXCLUSIVE OF THE CETACEA

By NED HOLLISTER

Order No. 418. Paper, 64 pages, $0.50, postpaid.

This is the only recent attempt to enumerate the mammals of the Philippine Islands. The distribution of each species is given, and the original descriptions are cited.

ZOOLOGY—Continued

A MANUAL OF PHILIPPINE BIRDS

By RICHARD C. MCGREGOR

Order No. 103. Paper, 2 parts, 769 pages, $4, postpaid.

A Manual of Philippine Birds contains in compact form descriptions of all the known species of Philippine birds. The usual keys and diagnoses of orders, families, and genera help the novice in identification.

A CHECK-LIST OF PHILIPPINE FISHES

By DAVID STARR JORDAN and ROBERT EARL RICHARDSON

Order No. 102. Paper, 78 pages, $0.75, postpaid.

This list will be found a convenient guide to the synonymy of Philippine ichthyology. The nomenclature is thoroughly revised, and the distribution of each species within the Philippine Islands is given.

MEDICINE

REPORT OF THE INTERNATIONAL PLAGUE CONFERENCE

Held at Mukden, April, 1911, under the auspices of the Chinese Government.

Edited by ERICH MARTINI, G. F. PETRIE, ARTHUR STANLEY, and RICHARD P. STRONG

483 pages, 18 plates (2 colored, 4 halftones, 12 charts and maps)

Order No. 416. Paper, $2.50; cloth, $3.50; postpaid.

The proceedings of this International Conference and information gained therefrom, together with the results of certain bacteriological investigations, constitute the present report.

The Bureau of Science of the Government of the Philippine Islands has been appointed sole agent for the distribution of the printed proceedings of the International Plague Conference.

PRICES ARE IN UNITED STATES CURRENCY

Orders for these publications may be sent to the BUSINESS MANAGER, PHILIPPINE JOURNAL OF SCIENCE, BUREAU OF SCIENCE, MANILA, P. I., or to any of the agents listed below. Please give order number.

The Macmillan Company, 64–66 Fifth Avenue, New York, U. S. A.
Wm. Wesley & Son, 28 Essex Street, Strand, London, W. C., England.
Martinus Nijhoff, Lange Voorhout 9, The Hague, Holland.
Mayer & Müller, Prinz Louis Ferdinandstrasse 2, Berlin, N. W., Germany.
Kelly & Walsh, Ltd., 32 Raffles Place, Singapore, Straits Settlements.
A. M. & J. Ferguson, 19 Baillie Street, Colombo, Ceylon.
Thacker, Spink & Co., P. O. Box 54, Calcutta, India.

CONTENTS

	Page.
BAKER, C. F. Studies in Philippine Jassoidea: I, Some Remarkable Tettigoniellidæ	409
BICKHARDT, H. Philippinische Histeriden: I	423
MELICHAR, L. Neue Fulgoriden von den Philippinen	433
FLEUTIAUX, ED. Elateridæ des îles Philippines	441
RAFFRAY, A. Catalogue des Psélaphides (Coléoptères) des îles Philippines	451
CRAWFORD, J. C. New Philippine Hymenoptera	457

The "Philippine Journal of Science" is issued as follows:	U. S. currency
Section A. Chemical and Geological Sciences and the Industries	$2.00
Section B. Tropical Medicine	3.00
Section C. Botany	2.00
Section D. General Biology, Ethnology, and Anthropology (Section D began with Volume V)	2.00
Entire Journal, Volume II, III, IV, or V	5.00
Entire Journal, beginning with Volume VI	7.00
Single numbers of Volume I	.75
Single numbers (except of Volume I)	.50
Volume I, 1906 (not divided into sections) and supplement, sold only with a complete file of section A, B, or C	10.00
Supplement to Volume I (Botany)	3.50
Volume I (without supplement), sold only with a complete file of section A, B, or C	6.50

Each section is separately paged and indexed.

Publications sent in exchange for the Philippine Journal of Science should be addressed: Library, Bureau of Science, Manila, P. I.

Subscriptions may be sent to the BUSINESS MANAGER, Philippine Journal of Science, Bureau of Science, Manila, P. I., or to any of the agents listed below:

AGENTS

The Macmillan Company, 64–66 Fifth Avenue, New York City, U. S. A.
Wm. Wesley & Son, 28 Essex Street, Strand, London, W. C., England.
Martinus Nijhoff, Lange Voorhout 9, The Hague, Holland.
Mayer & Müller, Prinz Louis Ferdinandstrasse 2, Berlin, N. W., Germany.
Kelly & Walsh, Limited, 32 Raffles Place, Singapore, Straits Settlements.
A. M. & J. Ferguson, 19 Baillie Street, Colombo, Ceylon.
Thacker, Spink & Co., P. O. Box 54, Calcutta, India.

Entered at the post-office at Manila, P. I., as second-class matter

EXAMINED.

VOL. IX, SEC. D, NO. 6 NOVEMBER, 1914

THE PHILIPPINE JOURNAL OF SCIENCE

ALVIN J. COX, M. A., PH. D.
GENERAL EDITOR

SECTION D

GENERAL BIOLOGY, ETHNOLOGY, AND ANTHROPOLOGY

EDITED WITH THE COÖPERATION OF

M. L. MILLER, PH. D.; R. P. COWLES, PH. D.; C. S. BANKS, M. S.
ALVIN SEALE, A. B.; C. F. BAKER, A. M.
RICHARD C. McGREGOR, A. B.

IMP. BUREAU ENTOM.
Recd. 9 JUL 1915

MANILA
BUREAU OF PRINTING
1914

PUBLICATIONS FOR SALE BY THE BUREAU OF SCIENCE, MANILA, PHILIPPINE ISLANDS

ETHNOLOGY

A VOCABULARY OF THE IGOROT LANGUAGE AS SPOKEN BY THE BONTOC IGOROTS

By WALTER CLAYTON CLAPP

Order No. 408. Paper, 89 pages, $0.75, postpaid.

The vocabulary is given in Igorot-English and English-Igorot.

THE NABALOI DIALECT

By OTTO SCHEERER

and

THE BATAKS OF PALAWAN

By EDWARD Y. MILLER

Order No. 403. Paper, $0.25; half morocco, $0.75; postpaid.

The Nabaloi Dialect (65 pages, 29 plates) and the Bataks of Palawan (7 pages, 6 plates) are bound under one cover.

THE BATAN DIALECT AS A MEMBER OF THE PHILIPPINE GROUP OF LANGUAGES

By OTTO SCHEERER

and

"F" AND "V" IN PHILIPPINE LANGUAGES

By CARLOS EVERETT CONANT

Order No. 407.

These two papers are issued under one cover, 141 pages, paper, $0.80, postpaid.

THE SUBANUNS OF SINDANGAN BAY

By EMERSON B. CHRISTIE

Order No. 410. Paper, 121 pages, 1 map, 29 plates, $1.25, postpaid.

Sindangan Bay is situated on the northern coast of Zamboanga Peninsula. The Subanuns of this region were studied by Mr. Christie during two periods of five and six weeks, respectively.

The 29 plates illustrate the Subanuns at work and at play; their industries, houses, altars, and implements; and the people themselves.

THE HISTORY OF SULU

By NAJEEB M. SALEEBY

Order No. 406. Paper, 275 pages, 4 maps, 2 diagrams, $0.75, postpaid.

In the preparation of his manuscript for The History of Sulu, Doctor Saleeby spent much time and effort in gaining access to documents in the possession of the Sultan of Sulu. This book is a history of the Moros in the Philippines from the earliest times to the American occupation.

ETHNOLOGY—Continued

STUDIES IN MORO HISTORY, LAW, AND RELIGION

By NAJEEB M. SALEEBY

Order No. 405. Paper, 107 pages, 16 plates, 5 diagrams, $0.25; half morocco, $0.75; postpaid.

This volume deals with the earliest written records of the Moros in Mindanao. The names of the rulers of Magindanao are recorded in five folding diagrams.

NEGRITOS OF ZAMBALES

By WILLIAM ALLAN REED

Order No. 402. Paper, 83 pages, 62 plates, $0.25; half morocco, $0.75; postpaid.

Plates from photographs, many of which were taken for this publication, show ornaments, houses, men making fire with bamboo, bows and arrows, dances, and various types of the people themselves.

INDUSTRIES

PHILIPPINE HATS

By C. B. ROBINSON

Order No. 415. Paper, 66 pages, 8 plates, $0.50 postpaid.

This paper is a concise record of the history and present condition of hat making in the Philippine Islands.

THE SUGAR INDUSTRY IN THE ISLAND OF NEGROS

By HERBERT S. WALKER

Order No. 412. Paper, 145 pages, 10 plates, 1 map, $1.25, postpaid.

Considered from the viewpoint of practical utility, Mr. Walker's Sugar Industry in the Island of Negros is one of the most important papers published by the Bureau of Science. This volume is a real contribution to the subject; it is not a mere compilation, for the author was in the field and understands the conditions of which he writes.

A MANUAL OF PHILIPPINE SILK CULTURE

By CHARLES S. BANKS

Order No. 413. Paper, 53 pages, 20 plates, $0.75, postpaid.

In A Manual of Philippine Silk Culture are presented the results of several years' actual work with silk-producing larvæ together with a description of the new Philippine race.

PUBLICATIONS FOR SALE BY THE BUREAU OF SCIENCE, MANILA, PHILIPPINE ISLANDS—Continued

BOTANY

A FLORA OF MANILA

By ELMER D. MERRILL

Order No. 419. Paper, 490 pages, $2.50, postpaid.

Practically a complete flora of the cultivated areas in the Philippines. Descriptions, with keys, of over 1,000 species, 590 genera, and 136 families, with native names, glossary of technical terms, etc.

THE COCONUT PALM IN THE PHILIPPINE ISLANDS

Order No. 37. Paper, 149 pages, 30 plates, $1, postpaid.

The reprint contains the following articles: On the Water Relations of the Coconut Palm (Cocos nucifera), The Coconut and its Relation to Coconut Oil, The Keeping Qualities of Cocoanut Oil and the Causes of its Rancidity, and The Principal Insects Attacking the Coconut Palm.

INDO-MALAYAN WOODS

By FRED W. FOXWORTHY

Order No. 411. Paper, 182 pages, 9 plates, $0.50, postpaid.

In Indo-Malayan Woods, Doctor Foxworthy has brought together a large amount of accurate information concerning trees yielding woods of economic value.

ZOOLOGY

A LIST OF THE MAMMALS OF THE PHILIPPINE ISLANDS, EXCLUSIVE OF THE CETACEA

By NED HOLLISTER

Order No. 418. Paper, 64 pages, $0.50, postpaid.

This is the only recent attempt to enumerate the mammals of the Philippine Islands. The distribution of each species is given, and the original descriptions are cited.

ZOOLOGY—Continued

A MANUAL OF PHILIPPINE BIRDS

By RICHARD C. MCGREGOR

Order No. 103. Paper, 2 parts, 769 pages, $4, postpaid.

A Manual of Philippine Birds contains in compact form descriptions of all the known species of Philippine birds. The usual keys and diagnoses of orders, families, and genera help the novice in identification.

A CHECK-LIST OF PHILIPPINE FISHES

By DAVID STARR JORDAN and ROBERT EARL RICHARDSON

Order No. 102. Paper, 78 pages, $0.75, postpaid.

This list will be found a convenient guide to the synonymy of Philippine ichthyology. The nomenclature is thoroughly revised, and the distribution of each species within the Philippine Islands is given.

MEDICINE

REPORT OF THE INTERNATIONAL PLAGUE CONFERENCE

Held at Mukden, April, 1911, under the auspices of the Chinese Government.

Edited by ERICH MARTINI, G. F. PETRIE, ARTHUR STANLEY, and RICHARD P. STRONG

483 pages, 18 plates (2 colored, 4 halftones, 12 charts and maps)

Order No. 416. Paper, $2.50; cloth, $3.50; postpaid.

The proceedings of this International Conference and information gained therefrom, together with the results of certain bacteriological investigations, constitute the present report.

The Bureau of Science of the Government of the Philippine Islands has been appointed sole agent for the distribution of the printed proceedings of the International Plague Conference.

PRICES ARE IN UNITED STATES CURRENCY

Orders for these publications may be sent to the BUSINESS MANAGER, PHILIPPINE JOURNAL OF SCIENCE, BUREAU OF SCIENCE, MANILA, P. I., or to any of the agents listed below. Please give order number.

The Macmillan Company, 64–66 Fifth Avenue, New York, U. S. A.
Wm. Wesley & Son, 28 Essex Street, Strand, London, W. C., England.
Martinus Nijhoff, Lange Voorhout 9, The Hague, Holland.
Mayer & Müller, Prinz Louis Ferdinandstrasse 2, Berlin, N. W., Germany.
Kelly & Walsh, Ltd., 32 Raffles Place, Singapore, Straits Settlements.
A. M. & J. Ferguson, 19 Baillie Street, Colombo, Ceylon.
Thacker, Spink & Co., P. O. Box 54, Calcutta, India.

CONTENTS

	Page.
ROBERTSON, JAMES A. The Igorots of Lepanto	465
McGREGOR, RICHARD C. Description of a New Species of Prionochilus from the Highlands of Luzon	531
GROUVELLE, A. Nitidulidæ des Philippines recoltés par C. F. Baker	535
Index	543

The "Philippine Journal of Science" is issued as follows:	U. S. currency
Section A. Chemical and Geological Sciences and the Industries	$2.00
Section B. Tropical Medicine	3.00
Section C. Botany	2.00
Section D. General Biology, Ethnology, and Anthropology (Section D began with Volume V)	2.00
Entire Journal, Volume II, III, IV, or V	5.00
Entire Journal, beginning with Volume VI	7.00
Single numbers of Volume I	.75
Single numbers (except of Volume I)	.50
Volume I, 1906 (not divided into sections) and supplement, sold only with a complete file of section A, B, or C	10.00
Supplement to Volume I (Botany)	3.50
Volume I (without supplement), sold only with a complete file of section A, B, or C	6.50

Each section is separately paged and indexed.

Publications sent in exchange for the Philippine Journal of Science should be addressed: Library, Bureau of Science, Manila, P. I.

Subscriptions may be sent to the BUSINESS MANAGER, Philippine Journal of Science, Bureau of Science, Manila, P. I., or to any of the agents listed below:

AGENTS

The Macmillan Company, 64–66 Fifth Avenue, New York City, U. S. A.
Wm. Wesley & Son, 28 Essex Street, Strand, London, W. C., England.
Martinus Nijhoff, Lange Voorhout 9, The Hague, Holland.
Mayer & Müller, Prinz Louis Ferdinandstrasse 2, Berlin, N. W., Germany.
Kelly & Walsh, Limited, 32 Raffles Place, Singapore, Straits Settlements.
A. M. & J. Ferguson, 19 Baillie Street, Colombo, Ceylon.
Thacker, Spink & Co., P. O. Box 54, Calcutta, India.

Entered at the post-office at Manila, P. I., as second-class matter